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The Effectiveness of Police Driver Training on Attitudes, Beliefs, and Skills

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ABSTRACT

The research undertook an analysis of the effectiveness of police driver training in the development of appropriate driver attitudes and skills in terms of the objectives of the training. The research focused upon the Standard/Response course of the Essex Police. Trainees attitudes and skill, levels were measured at the beginning and after each phase of training. An assessment of the stability and longevity of attitudes and skill levels was made 3-10 months after the training. In addition, the influence of police driving instructors and police recruitment policy on the development of attitudes was made. From the research, an evaluation has also been made of the effectiveness of different methods of researching and measuring an individual's attitude towards a particular behaviour, having used direct, semi-direct, and indirect methods of attitude measurement.

CONTENTS

NOTATION

A_{act}	=	Attitude towards a specific behaviour
b_i	=	Belief that performing the behaviour will lead to consequence i; the normative belief
a_i	=	The persons evaluation of consequence i
n	=	Number of beliefs, number of referent groups
SN	=	Subjective norm
m_i	=	Motivation to comply with referent groups
B	=	Behaviour
BI	=	Behavioural intention
w^0, w^1	=	Empirically determined weights
SE	=	Self efficacy, the belief about being capable of performing specific behaviours in specific situations.

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CHAPTER 1

INTRODUCTION

1.0 The Need to Improve the Safety of Roads

The safety of road travel in Great Britain has shown an immense all round improvement over the last fifty years, with the number of deaths declining despite an increase in the number of cars. Sabey and Taylor (1980, p3) estimated that in Great Britain, the risk of involvement in a fatal accident is 1 in 2500 years, 1 in 57 years for an injury accident, and 1 in 9 years for an accident not involving injury. Provisional figures show that road deaths in Great Britain for the year ending in June 1991 have fallen to the lowest level since 1948, dropping by 18% since 1990 (Dynes, 1991). This trend has occurred despite an increase in the number of vehicles of approximately 430% since 1950. The overall casualty rate has declined, with a significant decline of approximately one fifth since the early 1980's (Department of Transport, 1988).

Although the reduction in the number of deaths and injuries from road accidents in Great Britain is promising, an analysis of the numbers involved shows that road accidents are still a significant problem requiring attention. In 1991 there were 311,269 accidents in which someone was killed or seriously injured. These resulted in 4568 deaths, 51,605 serious casualties, and 255,096 slight casualties. The vast majority of casualties are car users (62.1%), with pedestrians comprising the next highest road user category (18.7%). The total cost of all accidents in 1991 was £6141 million, of which £4803 million was attributable to personal injury accidents, with the remainder being damage only accidents (Department of Transport, 1992). Raffle (1991) states that if the deaths and injuries caused by road accidents were caused by an infectious disease, there would be considerable media and public outrage, demanding that preventative action be taken. The problem of reducing accidents has been recognised by the Government stating that its objective is to reduce annual casualties by one third by the year 2000 (Department of Transport, July 1987).

It is also worth noting that the problem of road safety may be far worse than government statistics indicate. This is because it may be possible for roads to experience a reduction in the number of accidents, but in terms of the perceived danger of the road for those who use it, there may be no change, and hence no change in road safety. In such a situation, a reduction in road accidents may be due to behaviour modifications because of dangerous roads, rather than an improvement in road safety. Adams (1989) claims that the reduction in the number of children killed on roads over the last 60 years is due to children being far more aware of traffic, and not because of an improvement in road safety. Appleyard and Lintell (1972, cited in Adams, 1989) show that as the threat of traffic increases, the frequency with which pedestrians cross the road decreases. A low accident rate might not mean that a road is safe, but that it is so dangerous that few people try to cross it. Davis (1992) states that because road safety research and practice is primarily concerned with accident reduction, rather than road safety, road safety is not improved for large sections of the population, such as children and the elderly, which in turn limits their freedom to pursue many activities. In addition, the effect of social change has also led to a decline in the use of the modes of transport with high fatality rates (motor cycling, pedal cycling, and walking). This change in social habits has had the effect of

disproportionately offsetting the increase in fatalities to motorists, producing an almost unchanged total number of deaths (West-Oram, 1989).

It could also argued that governments statistics on road accidents do not record all accidents and casualties. Adams (1989) points out that geographical differences in accident rates might be accounted for by under-reporting of minor injuries in more sparsely populated areas where there are fewer police officers to report accidents. The British Medical Association (1983) estimate that 30% of traffic accident casualties seen in hospital are not reported to the police, and at least 70% of cyclist casualties go unrecorded. Tunbridge (1988, cited in Raffle, 1991) in a study of Oxford found that 65% of motorcyclist and 69% of cyclist injury accidents seen at hospital (where no other vehicle was involved) were not recorded by the police. Teanby (1992) found that the accident statistics recorded by the Merseyside Police underrecorded pedestrian accidents by 16%, and estimated that if this underrecording occurred nationally, approximately 10,000 casualties/year may not be recorded by government statistics. These studies also probably underestimate the problem as there may be injuries that are neither recorded by the hospitals or the police. The Association of British Insurers (Department of Transport, 1988) have discovered that for every personal injury accident there were 8-10 damage only accidents which are not recorded by the governments statistics. They also found that claims have increased in all classes of vehicle except motorcycles.

The Department of Transport statistics on road accidents may also underestimate the severity of accidents. This because they contain very little detail of the nature and severity of injuries, and are generally calculated by the police without the results of a medical examination (Raffle, 1991).

Thus, whilst accident statistics reveal that the number of accidents has declined over the last 50 years, they do not necessarily indicate that there has been an improvement in road safety.

1.1 Approaches to Improving Road Safety

There are three main approaches to improving road safety which are aimed at both drivers and pedestrians. These will now be dealt with respectively

1.11 Road Engineering Improvements

For drivers, these aim to simplify the problems of driving by lowering the environmental demands of a road. Engineering improvements hope to aid the information acquisition process and extend the range of driver responses that will be tolerated before a vehicle goes out of control. Drivers will thus be able to manoeuvre their vehicles more easily and safely and this will lessen the probability of road accidents. Engineering improvements are often concentrated at locations on the road network with high accident frequencies (accident blackspots) and involve improved roadway design (for example, road widening or corner straightening), communication systems, (for example, road sign design), and traffic control devices (for example, signals).

For pedestrians, most effort has been placed into channelling them into specific points for crossing streets, and to alert drivers to the potential presence of pedestrians, for example, zebra and pelican crossings. Effort has also been directed at separating pedestrians from vehicular traffic via overpasses and underpasses and pedestrian only zones. Recently, especially in Europe, speed ramps have been introduced in built up and residential areas to prevent drivers from speeding.

Wells (1979) estimates that engineering improvements may reduce accidents by up to 40% at intersections or nodes and 80% at non-intersection locations or links. The Department of the Environment for Northern Ireland (1992, p13) state that road engineering improvements introduced in 1988/9 have led to a 41% average reduction of accidents at treated sites, with a saving to the community of approximately £4.5 million. There are also numerous other studies that demonstrate the value of engineering improvements in reducing accidents (Anderson 1976 p20-21).

However, there are also studies which point out that any improvements have limited long term effects on road safety. Mahalel and Szternfeld (1986) state that task simplification may lead to underestimation of task difficulty which will decrease the level of arousal. Performance may thus deteriorate to such a low level that an accident occurs. They illustrate their case with several studies of engineering improvements which have been unsuccessful in improving road safety and conclude by stating that engineering improvements should strive to make driving tasks easier, without involving an underestimation of task difficulty. It is debatable whether such a situation can be obtained. Boyle and Wright (1984) found that sites which were next to treated accident blackspots experienced an increase in accidents by 10% and they hypothesize that this "accident migration" was because the treated blackspot requires less caution, and such behaviour on an untreated part of the road will thus cause accidents. Herms (1972) discovered that marked crosswalks had a higher accident risk for pedestrians than unmarked crosswalks. Herms felt that this was due to pedestrians having a false sense of security, expecting motorists to stop in all cases, even when it was not possible to do so. Adams (1988) criticises engineering improvements for pedestrians as they often impose heavy performance penalties, curbing freedom, and obliging people to travel further through tunnels and over footbridges.

It therefore seems that although engineering improvements may be able to reduce accidents, they can also be ineffective if road users modify their behaviour as a result of such measures.

1.12 Vehicle Design

Changes in vehicle design aim to improve safety in two ways:

1) Increase the ability of a vehicle to sustain an accident and decrease its destructive impact on pedestrians; for example by improving a vehicle's structural integrity, developing energy absorption devices (such as dashboard covers and bumpers), and improved occupant restraint systems. The aim of this method is to lessen the severity of an accident once it has occurred.

2) Pre crash improvements, for example improving the mirrors, lighting system, in-vehicle displays, vehicle control and handling systems. Such improvements aim at giving drivers an improved chance of avoiding hazardous situations by increasing the safety margin.

Both approaches have been popular in recent years with increased government regulation of the automotive industry, and a sharpening of consumer awareness of safety issues, leading to manufacturers attempting to sell cars on the basis of their safety features (for example, Volvo, Audi).

Tumbus et al (1977), on analysing 215 accidents calculated that two wheel anti-lock braking systems would produce a 2% benefit in accident reduction, while four wheel anti-lock braking systems would give an 8% benefit.

accidents. Robertson (1980) has discovered that driver education in high schools which involves on the road training leads to individuals obtaining licences sooner, but that this leads to their increased involvement as drivers in serious crashes. Huffman and Thomson (1981) state that although there have been numerous media reports of studies that have found the courses to be of no benefit, the most influential studies suffer from methodological deficiencies which cast doubt on their conclusions. They also note that there are numerous studies conducted that show that such programmes do improve road safety.

From the research cited, it is difficult to evaluate the effectiveness of such training. The variations in the contents of the training programmes are not taken into consideration by most of the research (Huffman and Thomson, 1981). Driving is a complex skill which is best learned by practice (Shinar, 1978, p132). If secondary school courses offer little actual driving experience, then it is unlikely that they will be effective. More research needs to be undertaken that analyse the content of the courses before their effectiveness can be evaluated.

1.13.3 Standard Driver Training Programmes

In Great Britain, commercial driving schools have been developed to teach the skills necessary to pass the Ministry of Transport test that allows an individual to drive unsupervised. Skelly (1968) found that although such courses have greater success in preparing a pupil for a driving test than a private individual, they have less success in teaching how to drive safely, as individuals who have undertaken such a course have a higher subsequent accident record. Brown et al (1987) found similar results, believing there is something fundamentally wrong with the current driver training philosophy, with teaching pupils to pass the test appearing to take priority over teaching safe driving. In addition, it could be argued that as the majority of accidents involve individuals who have already passed the Ministry of Transport test, driver training which focuses on passing this test are unlikely to improve road safety.

1.13.4 Advanced Driver Training Programmes

These have been developed to improve driving ability to a standard above that required to obtain a driving licence. The content of the programmes vary considerably, although they generally aim to improve a driver's cognitive and perceptual skills, and attitude towards driving. Some of these courses are made compulsory for certain employees for whom driving constitutes a large element of their occupation (for example, police and ambulance drivers), while others have been set up to be taken voluntarily by people who are prepared to devote time and money to improving their driving ability.

Hoinville et al (1972) reported that those who passed the driving test used by the Institute of Advanced Motorists were safer drivers as they had 25% fewer accidents (in the 3 years after the test) than those who failed the test (p1) and that these accidents were also slightly less serious (p6). Whitworth (1977) in a study of police officers, evaluated an advanced driver education programme developed by General Motors. In comparing trained and untrained control groups, it was found that the trained group showed a 50% reduction in accidents when compared to the untrained group, and that this trend was maintained over eight years by the trained group still on duty. Fazakerley et al (1972) found the police driving course run for the general public produced a marked improvement in driving knowledge and practical driving performance. In a recent article (Fleet Facts, 1991), the winners and runners up of Britains safest large car fleet (at Britains safest fleet awards) were reported as both conducting a programme of advanced driver training for their drivers. The winners,

However, critics point out that a potential counter-effect of improved vehicle design is that once drivers are accustomed to the new system, they will take new and added risks, thereby nullifying the potential benefits of the improvements. Adams (1988) states that if a vehicle is fitted with improved brakes, drivers enjoy additional safety margins and thus tend to drive faster or start braking later, driving with less care and attention. It is also worth noting that vehicles are being designed to travel at increasingly higher speeds with improved acceleration rates (Plowden and Hillman 1984 p91). It is possible that such improvements will counterbalance any other safety improvements in vehicle design.

There is some evidence however that vehicle safety improvements that are not readily visible to the driver are less likely to produce changes in driving performance. Koppa and Hayes (1976) in studying driving performance in four different vehicles found that drivers generally do not adjust their steering, brake and acceleration inputs to exploit vehicles capabilities, although they conclude that more research needs to be undertaken.

1.13 Road User Improvements

This approach is based on evidence that accidents are caused by human errors and inadequacies. Treat et al (1979) found that in USA 57% of road accidents involved driver factors and a further 36% of accidents involved driver factors in addition to road and vehicle factors, making a total of 93% of accidents involving road user factors. Sabey and Taylor (1980) in a study of accidents in Great Britain discovered that human factors contribute to around 95% of all road accidents and were the sole cause in 65% of accidents (p6). This approach aims at improving road safety by influencing human behaviour. Sabey and Taylor note that although it is difficult to influence the road user, when it does occur, it can have a dramatic effect on road safety (p17). They state that studies of accident causation show that influencing human behaviour has the greatest potential for reducing accidents. There have been several different approaches to road user improvement which will be dealt with respectively.

1.13.1 Secondary School Education and Mass Media Campaigns

This approach attempts to make road users more aware of the rules that govern traffic. Various education programmes through school education and mass media campaigns have been directed at increasing the public awareness of road safety. In Great Britain, the green cross code for pedestrians, drink driving and seat belt campaigns are examples of this approach. However at present, the effectiveness of such campaigns is uncertain.

1.13.2 Secondary School Driving Courses

These are common in USA and incorporate driver training and education within the school curriculum. They aim to teach safe driving techniques at the early stages of learning to drive as this a crucial stage of the learning task (Shinar, 1978, p132). As these courses involve the age group with the highest accident risk, they could have a significant impact on road safety if they are effective. The content of the courses vary but generally involve classroom instruction and experience of actual driving.

Research into the effectiveness of secondary school courses has produced inconclusive results. Mc Guire and Kersh (1969) note that studies typically fail to show any significant advantages of such programmes. Harrington (1971) in studying young drivers who had been involved in behind the wheel courses noted a reduction in

Du Pont (UK) have only had one serious car accident in the last 20 years (1 serious accident/175 million kilometres).

However, it has been discovered (Author anonymous, 1984) that the National Safety Council's defensive driving course does not reduce the probability of motor vehicle accidents. Lund and Williams (1985) in reviewing 14 studies of defensive driving courses found two thirds of studies had methodological flaws. Only these studies showed beneficial effects, while the others showed that such training had no reliable effect on subsequent accident rates. Collins (1992, p6) on undertaking research at the Metropolitan Police stated that there is no proof that drivers who attend a three week standard police driver training course have a better police accident rate than police drivers with no police driver training.

It would seem debatable whether such training programmes produce safer driving behaviour, although due to the differing content of the various programmes, it is difficult to make comparisons, or draw conclusions.

1.13.5 Enforcement

Enforcement of traffic laws by the police is used as a means of deterring people from committing behaviour that is illegal, and also potentially hazardous, for example speeding. Studies have shown (for example Reinfurt, Levine, and Johnson 1973) that police presence does induce drivers to behave more safely, and is particularly effective when coupled with media publicity.

However, due to the practical limitations stemming from limited funds, the monitoring of drivers by the police is often not that systematic. Thus, in the absence of the police, a driver may not always get feedback of improper driving, and when a driver does obtain feedback from a police officer, it may not always be consistent due to varying interpretations of the law by different officers.

1.14 Summary

It can be seen that none of the three approaches to improving road safety have produced conclusive results. Environmental and vehicular improvements, although can be effective, can be prone to behaviour modification by road users, cancelling out any potential benefits. Improvements to road user behaviour however seem more debatable and inconclusive. Such a finding does seem strange, especially for driver improvements, due to the overwhelming evidence identifying the driver as the major cause of accidents (Treat et al, 1979, Sabey and Taylor, 1980, p6). Road user improvement requires further research, as it is unclear whether present attempts to improve road users are effective.

1.2 Approach Adopted in Great Britain to Improve Road Safety

In Great Britain, the majority of measures to improve road safety have focused on road engineering and vehicle design, with less attention placed on road user improvement. Adams (1988) states that expenditure on road building is far greater than any other road safety measure, yet often does not lead to the improvements in road safety that the government estimated prior to building a particular road.

The government has recognised the need to shift resources to actions which would save lives. Following a review of road safety policy, a report was published (Department of Transport 1987) which stated that safety gains would be derived from improving vehicle engineering and from expanding local activity to provide safer

roads for pedestrians, cyclists, and motor cyclists. The report aimed to reduce road casualties by one third by the year 2000. Following this report, road safety schemes have received increased attention. To improve enforcement of traffic laws, the government has recently made it possible for widespread installation of cameras on motorways, urban roads, traffic lights, and accident blackspots to occur (Dynes, 1991). In 1991, the amount spent on road safety publicity was increased from £4.75 million to £6 million (The Financial Times, April 1991). Examples of campaigns introduced in 1991 are a campaign to warn drivers to drive more slowly to reduce the number of child pedestrian deaths (Bennett, 1991), and a child cycle safety campaign recommending the use of cycle helmets (Bidder, 1991). It is too premature to evaluate the success of such campaigns. However, the Eastern Region of Great Britain for example has reported success in various publicity measures related to in-car safety and drinking and driving, the use of drama in education, education within the classroom, and information about engineering remedial measures (Department of Transport, November 1989). The government has also given funding to behavioural research into ways of influencing road users (The Surveyor, March 1991).

Although many road safety projects have been introduced by the government since 1987, using a variety of approaches, it appears that the government has not undertaken research to discover whether advanced driver training programmes are an effective measure to improve road safety. In addition, despite the recent diversified approach to road safety, the government still believe that new roads will produce quicker reductions in casualties and has expanded its road building programme (Department of Transport, May 1989).

1.3 Objectives of Thesis

The objectives of the thesis are:

1) To analyse the effectiveness of police driver training programmes in promoting safer driving. This will be undertaken via an evaluation of the following:

   a) The attitudes, beliefs, and skill levels of drivers at a particular point in time.

   b) Changes in attitudes, beliefs, and skill levels of drivers brought about as a result of training programmes.

   c) The longevity and stability of these changes over time.

2) To discover the most appropriate method to measure the effect of driver training on attitudes towards driving.

3) To discover if there are any other factors in addition to driver training that will affect attitudes towards driving. As the chosen study area is police driver training (see section 1.4), an analysis will be made of the factors that may influence attitudes towards driving within the police force. The following factors will therefore be analysed:

   a) Instructors' Influence on Trainees' Attitudes.

   b) Recruitment Policy.

These objectives have been chosen because:

1) Despite reductions in the number of deaths and casualties, road safety is still a significant problem requiring attention. Research has demonstrated the importance of human error in causing road accidents (Treat et al, 1979 and Sabey and Taylor, 1980). To overcome the human error element in driving, effective countermeasures need to be developed and proven to be effective. At present, it is debatable whether the development of advanced driver training programmes can or cannot improve road safety (see section 1.134). Further research therefore needs to be undertaken into the effectiveness of advanced driver training programmes. This research will be beneficial in determining whether it is possible to improve road safety by promoting advanced driver training, and demonstrate whether there is need for the government to invest in advanced driver training programmes.

2) Studies of the effectiveness of advanced driver training programmes (including the police) are largely based on changes in accident rates, and as such may not necessarily measure changes in road safety (see section 1.0). An individual's accident record also takes several years to materialise. To evaluate an advanced driver training programme that has only been recently introduced using accident rates would have to be undertaken over a long period of time. Such a procedure is inadequate as policy makers need quicker feedback in order to discover whether the introduction of advanced training, or modifications to existing programmes should be continued or changed. Due to these reasons, accident statistics were not used. The research has therefore analysed the effectiveness of advanced driver training on attitudes, beliefs, and skill levels. It is argued that these are the key factors affecting driving ability (see chapter 2, section 2.6), and will therefore provide an accurate measure of the training programme's effectiveness in improving road safety.

3) The longevity and stability of changes in attitudes, beliefs, and skill levels will be researched because if training is to be effective in the long term, the attitudes, beliefs, and skills developed will need to be maintained by individuals undertaking the training for the rest of their driving careers. An analysis of the longevity and stability of these changes will discover if attitudes and skills deteriorate over time, thus displaying the long term effectiveness of the training programme.

4) Studies of attitudes towards driving that have been undertaken have suffered from methodological problems, generally from using direct techniques of attitude measurement. Attempts to measure attitudes towards driving by applying theories of attitude measurement and behaviour prediction have suffered from similar problems, due to the method of data collection that was used (see chapter 2, section 2.210). There is obviously a need for further research into the measurement of attitudes, and also in the way data is obtained from respondents.

5) An analysis of other factors that may affect attitudes towards driving is important so that measures can be adopted to counteract such influences.

1.4 Background to the Study Area: Essex Police Driver Training

1.41 Reasons for Choosing the Police

It has been decided to base the study on police driver trainees, as they are an organisation which by and large enforces its employees to undertake an advanced driver training programme, rather than only providing training to employees interested in improving their driving ability. This means that the sample is less likely to be biased towards safety conscious individuals, as may be the case if a sample was taken from an organisation who offered advanced driver training to those who wish to improve their driving, and are prepared to pay money to undertake this task (such as that offered by the Institute of Advanced Motorists or the Royal Society for the Prevention of Accidents). However, it must be noted that there are certain limitations to a study of the police force:

1) The driver training courses given by the police are more intensive than those the general public usually undertake. This is because police courses are usually undertaken on a full time basis (at residential schools) during working hours for a period of 3-6 weeks. Such intensity of training may mean that it would be difficult to draw comparisons to training courses that are not as intensive (for example, the Institute of Advanced Motorists or the Royal Society for the Prevention of Accidents).

2) Certain driving skills taught by the police would not be taught in an advanced driver training programme for the general public (for example, driving with two tone horns, pursuit driving). However, the main element of police driver training (Roadcraft, 1977) is used for most other driver training programmes (Amey, 1989a). The results of the research could therefore be used (to a certain extent) for comparison with such training programmes.

3) Undertaking the research within the police environment could affect the validity of results, possibly with instructors not wishing to portray an unfavourable image of the training, and trainees not wishing to display attitude and skill levels that would not be approved by superior officers. However, it must be noted that the research design helped to overcome such problems (see chapter 4).

Although limitations have been recognised, it is felt that wider implications in terms of road safety can be ascertained. The research should also be of value to the police force, as it will establish how effective recent changes to the training have been (see section 1.42).

1.42 Background to Police Driver Training

In Great Britain, the Police adopt a technique of advanced driver training known as "The system of car control (Roadcraft, 1977)." The system requires the driver to follow a sequence of actions on the approach to every hazard. The system is flexible in its application to the different situations that a driver experiences in day to day driving. It involves the teaching of advanced motor skills and also emphasises forward planning and observation. Most other forms of advanced driver training currently available are based on this technique (Amey, 1989a).

However, despite the training given, the accident rate of police drivers involved in police chases has sharply increased (The Daily Telegraph, 1989, p11) which has led to growing public concern. In 1987, of the 5440 accidents involving police cars,

police drivers were held to be wholly or partly to blame for almost 1/4 of them (Hill, 1989). Hill suggests that this may be due to pursuit drivers being too fond of the thrill of a chase. Pursuit accidents have been a particular cause for concern for the police. Harlow (1993) states that an analysis by the Avon and Somerset Constabulary in England and Wales in 1991 revealed that there were 29 deaths and 181 injuries involved in accidents following police pursuits. Taking the monetary values that the Department of Transport (1992) attributes to the costs of injuries involved in civilian road accidents, this number of pursuit accidents represents a cost to the nation of 22 million per annum.

Amey (1989a) states that someone using the police technique of advanced driver training is just as likely to have an accident as an untrained person because it does not improve an individual's attitude towards driving.

Due to these problems, the traffic committee of the Association of Chief Police Officers (ACPO) reviewed police driving, making 29 recommendations designed to improve driver training (ACPO, 1989). An important element of these recommendations was the need to introduce attitude and belief system training. This has led to police driving schools emphasising to a greater degree the importance of appropriate attitude development as part of driver training. At present it is not known how effective these changes have been. It was in the context of these changes in police driver training that the present research project was undertaken.

1.43 Background to the Essex Police's Driver Training Programme

The research with the Essex Police focused on the two phase Standard/Response course of police driver training which was set up following the ACPO report. Phase one is a four week standard driving course, and phase two is an additional two weeks intensive training in emergency response and containment tactics for those who perform well (qualifying as class three drivers) on the standard course. Part of the additional two weeks is undertaken on a road testing circuit consisting of different road surfaces. This element of the course is designed to make trainees become aware of how a car will perform on such surfaces, and also to become more aware of the limitations of their vehicles and their own skills/abilities. Following the recommendations of the ACPO report (1989), phase two of the training also aims to emphasise a calm mental approach towards such driving. This is to ensure that drivers do not become over-excited from the rush of adrenalin which can occur at high speeds, possibly leading to dangerous driving manoeuvres. Police officers who successfully complete phase two of the training are allowed to undertake pursuits, and also to drive with flashing blue lights in an emergency while on police duty.

Everyone who joins the Essex Police and who holds a standard driving licence usually undertakes the Standard/Response course. The training is given approximately six months after an individual completes the initial two years training that is required to qualify as a constable.

1.5 Summary of Chapter 1

1) There is a need to improve road safety in Britain.

2) Current approaches to road safety seem to suggest that the behavioural element of the driving task requires further research.

3) In Britain, the government has made little effort to improve driver training.

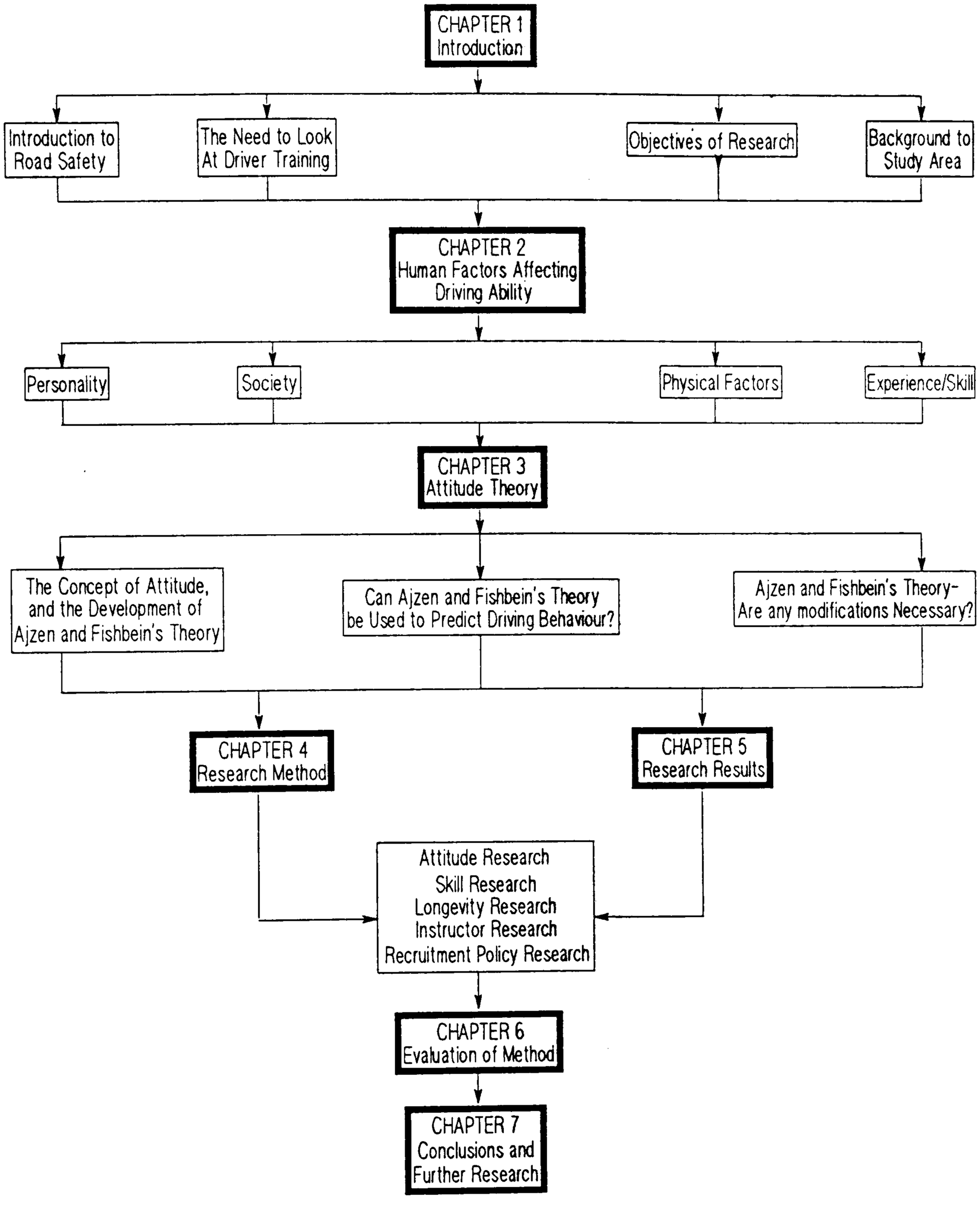
4) The objectives of the thesis have been outlined.

5) A background to the study area has been given.

A summary of the chapter contents of this thesis is given in figure 1.1, to provide the reader with an overview of its structure and content.

In the next chapter, an analysis will be made of the human factors affecting driving ability. This is to demonstrate that attitudes and skill levels are the key factors affecting driving ability, and hence should be studied to analyse the effectiveness of police driver training.

Figure 1.1 Summary of Chapter Contents



CHAPTER 2

HUMAN FACTORS AFFECTING DRIVING ABILITY

2.0 Introduction

In order to discover whether driver training (such as that used by the police) could potentially improve road safety, and to demonstrate that attitudes and skill levels are key factors affecting driving ability (and should be studied to analyse the effectiveness of driver training), an analysis will be made of the human factors affecting driving ability.

Research on human factors and driving performance can broadly be grouped into four general areas, namely the influence of society, personality, physical factors, and experience. Each of these factors interacts with each other and is not mutually exclusive. Each factor will now be dealt with respectively and will be further subdivided where necessary into specific areas. An evaluation of what the key factors are in terms of improving road safety will then be made and a possible solution to overcoming these factors will be stated.

2.1 Society

This refers to the network of social relationships which result from individuals coming together in response to the need for self preservation. "A society is a collection of individuals who are joined together by relationships or patterns of behaviour which distinguish them from other individuals who do not share these relationships (Wilkins 1976, p38)."

2.11 Social Maladjustment

This theory states that people who violate traffic laws and norms also experience inadequate adjustment to society's norms in general. Driving accidents are thus one manifestation of a method of living. Tillmann and Hobbs (1949), in a study of taxi drivers discovered that drivers who had an accident record, were also more likely to have been involved with criminal courts, health and social services, and credit agencies than accident free drivers. Similar findings have also been reported by Mayer and Treat (1977), and Shaffer et al (1976).

2.12 Social Interaction

Driving is seen as a situation involving interactions between road users, and this interaction can strongly affect driving. Dangerous or irrational driving actions may be undertaken as they make sense in terms of the social norms governing interaction. These could be general norms governing the whole of a particular society, or more individual social norms which are governed largely by group membership (for example, peer groups, the family etc). As it is possible to be a member of numerous social groups, each with conflicting social norms, an individual's driving behaviour could vary considerably, depending upon which social group is exerting its influence at a particular moment.

design and performance IQ scores were significantly lower for accident prone drivers, but also found no significant difference in verbal and full IQ scores between accident prone drivers and a control group. It therefore seems that it is debatable whether intelligence is related to driving ability, and more research will need to be undertaken before conclusions can be drawn.

2.23 Personal Maladjustment

This is the use of driving as a mechanism for coping with personal problems, for example, speeding when angry. People experiencing personal maladjustment will thus have a higher accident rate. Mc Murray (1970) for example found a high accident rate among people experiencing a divorce. Brown et al (1968, cited in Silvak, 1981) discovered that 80% of fatalities in their study had experienced one stressful event in the twenty four hour period preceding the accident. Donovan et al (1983) quote several studies which have found that life events requiring psychological readjustment are more prevalent among accident involved subjects.

2.24 Accident Proneness

This is the notion that accident repeaters possess a personality characteristic which makes them more liable to have mishaps, regardless of environmental circumstances. Such characteristics are assumed to be stable and enduring over time which implies that if these people can be identified and eliminated from the driving population, the number of accidents would be reduced.

Porter ne Houghton and Corlett (1989) found that individuals who believed themselves to be accident prone performed worse at a dual attention task than individuals who regarded themselves non accident prone. However the authors note that further experimentation would be required before firm conclusions could be drawn. In addition, the study was only based on a small sample of twenty respondents, and did not identify any stable personality type.

Shaw (1965) in a longitudinal study of bus drivers developed personality profiles for five different accident categories of driver. Using these profiles, assessors were able to predict correctly the objective accident category ultimately achieved by each driver in terms of the number and type of accidents experienced. However, each personality profile contained numerous different elements of personality which were not evaluated individually, and could not be regarded as specific personality types. Reason (1974, p187) pointed out that such studies provide no evidence of a clearly defined unsafe personality. Mc Guire (1976) notes that accident repeaters in one period of time are not necessarily accident repeaters in another period of time. He believes that certain people are accident prone, but for some this only lasted for short periods of time, while for others this tendency remained for longer periods. Also, people could be accident prone for different reasons, with the same person moving in and out of a state of accident proneness each time because of different circumstances. Such findings have therefore led to few recent studies adopting this approach to explain unsafe driving.

2.25 Stress

Stress occurs when the environmental demands appraised by an individual exceed the available resources. Experiencing stress while driving has been found to reduce an individual's mental capacity (Wiegand, 1974) which could result in a driver not being able to perceive and evaluate all the information necessary to drive safely in a particular situation. Brown and Bohnert (1968, cited in Forbes, 1972) found that 80%

The effects of social interaction have been displayed in several studies of driving behaviour. For example, Anderson (1971) has found a strong association between the seat belt use by the driver and the front seat passenger and attributes this behaviour to direct social influence. Ingham (1991) has found that drivers report that they undertake different driving behaviours when they have passengers in the car, and that this behaviour also varies with the type of passenger (for example; whether they are old or young, male or female). Deehy (1968) believes that social interaction can cause conflicts on the road if other drivers act under different norm systems as this limits a drivers ability to predict the behaviour of another driver correctly.

The effects of social interaction on driving behaviour could lead to dangerous driving, as such behaviour may not necessarily be safe nor comply with traffic law. For example, Ingham (1991) found that two thirds of young males reported that being with their friends encouraged faster or less careful driving.

2.2 Personality

Personality refers to the relatively stable and enduring features of the individual which distinguish 'him' from other people and form the basis of our prediction concerning future behaviour (Reason 1974, p183).

2.21 General Personality Tests

These are mathematically constructed and look for patterns in responses to large numbers of questions, from which numerous personality traits can be identified. Goldstein (1964) cited several studies of general personality tests that either failed to show any relationship to driving accidents or violations, or only showed a relationship between one or two of the dimensions that were measured. Quimby and Watts (1981, p15) found that only one of the 16 dimensions measured by Catell's 16PF personality questionnaire correlated significantly with errors in driving performance (conservative/experimenting dimension). However other research has not found this dimension to be related to driving performance (Gibling, 1990). Hilakivi et al (1989) found that several dimensions of the 16PF (all related to emotionality) could predict motor vehicle accidents of young male adults. Gibling (1990) administered the Occupational Personality Questionnaire to advanced police driver trainees and found that no personality characteristic could identify whether or not a trainee would qualify as an advanced driver. Gibling concluded that these findings may however be caused by individuals completing questionnaires dishonestly, in order to portray a favourable image, and may thus not reflect an individual's personality. General personality tests are prone to such response bias which has meant that it has often been difficult to assess results. This could explain the conflicting results obtained by research that has looked for relationships between the tests and driving performance.

2.22 Intelligence

Goldstein (1964) cites 4 studies that used a variety of different methods of measuring intelligence, each finding no relationship between intelligence and road accidents. Shaw (1965) discovered that the introduction of psychometric tests for testing intelligence and adaptability, and psychomotor tests to test some of the basic driving skills, did not aid the selection of new bus drivers in terms of the number of accidents they had once recruited. Rather, the accident rate increased with the introduction of the tests, and in general, the better the scores on the tests, the worse the accident record. However, Pannain et al (1983) discovered that individuals who cause road accidents and commit dangerous offences lack theoretical and practical intelligence, aptitude in rapid problem solving, and rational thinking. Jin et al (1991) found block

of drivers responsible for fatal collisions had experienced stress in the hours immediately before their collision. Finch and Smith (1970, cited in Mc Guire, 1976) in a study of drivers killed in vehicle crashes found similar results.

There are numerous interacting factors which cause us to experience stress when driving, both intrinsic and extrinsic to driving, which are mediated by our attitudes towards and appraisal of driving (Gulian et al, 1990). Gulian et al (1989a) note that driving stress can occur at a particular road situation, or can also be the result of long term exposure to traffic situations. They also point out that driving stress can impair other activities such as performance during work, and is related to a driver's age and experience. Stokols et al (1978) found traffic congestion caused stress, and that this stress increased in line with time and distance.

In some individuals, stress can cause increased anxiety, whereas in others, it can cause the adoption of an aggressive driving style. Gulian et al (1989b) found that few drivers coped with stress experienced during driving in an adequate manner, with the majority of drivers using aggressive thoughts and behaviours to reduce tension. This however contributes to maintaining stress levels and could therefore increase the likelihood of being involved in an accident.

It seems from the research cited that to overcome driver stress, an individual has to have an appropriate attitude towards driving, and also an effective strategy for coping with stress.

2.26 Locus of Control

This theory assumes that an individual's belief that he or she can (internal locus) or cannot (external locus) affect and influence life happenings will determine the probability of being involved in an accident. Several studies have provided evidence of a connection between locus of control and accidents. For example, Jones and Foreman (1984, cited in Hansen, 1988) in a study of bus driver applicants, found that applicants with an external locus of control also had a history of accidents. Bridge (1971, cited in Hansen, 1988) and Jonah (1984, cited in Hansen, 1988) in studies of car drivers found similar results.

2.27 Introversion/Extroversion

An introverted person prefers to attend to his or her inner world of experience, becoming involved in reflective and introspective thinking. Such a person is described as quiet, intellectual, organised, and emotionally controlled. Conversely, an extroverted person prefers to attend to the outer world of objective events, becoming actively involved in the environment. The extrovert is described as sociable, lively, novelty seeking, carefree, and emotionally expressive. Fine (1963, cited in Hansen, 1988), Smith and Kirkham (1981, cited in Hansen, 1988) and Jin et al (1991) have found that extroverts have more traffic accidents and safety violations than introverts. This is due to introverts being more vigilant, careful, and alert and attentive to environmental demands. It is worth noting however that some conflicting results have been found in industrial settings (Hansen, 1988), and in studies of driving (Perrine, 1970, cited in Donovan, 1983). Some further research may therefore be required to validate the theory.

2.28 Neuroticism

This refers to an individual who is suffering from emotional distress, accompanied by low self esteem and confidence. As such a person struggles to control internal anxiety

and panic, it is hypothesized that less attention is given to the safe performance of tasks, which will lead to a higher accident rate for these individuals. Canestrari (1968, cited in Pannain et al, 1983) states that neurotic depression causes delayed reaction times and late or inaccurate perception of danger. Jin et al (1991) found that the level of neuroticism was higher in accident prone drivers than control subjects. Hansen (1988) however notes that at present, studies have produced conflicting evidence due to neurosis being a multidimensional problem, with each study measuring a different element of neurosis. He suggests that further research is required to isolate the specific elements of neurosis that cause accidents.

2.29 Aggression

This refers to a tendency to act out ones anger and frustration, and can involve intended harm on a victim. Zelhart (1972, cited in Hansen, 1988) found that accident repeaters could be distinguished from other people by their aggressive attitudes towards others. Hauber (1980) and Donovan (1983) cite several studies that show that aggression is related to traffic accidents. Hauber (1980), in a study conducted in Holland measured driver aggression towards pedestrians in terms of failing to stop for a pedestrian at a pedestrian crossing, sounding the vehicle's horn, and making remarks towards the pedestrian. The study found that 25% of the sample displayed aggressive driving characteristics, and that aggressive driving was shown more by young men and towards male pedestrians. Aggressive driving took place more frequently in the afternoon and during business or commercial driving. These findings indicate that aggression is not always an uncontrollable physiological tendency, as such variations would be unlikely if this was the only explanation. It is probable that some of these variations may be related to an individual's motives and attitudes.

2.2.10 Attitude Towards Driving

Although a variety of definitions have been offered, there is a general consensus that an attitude is a "learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object" (Foxall, 1983, p41).

Ajzen and Fishbein (1980) have produced strong evidence to show that attitudes determine how an individual will behave in a given situation. If this is the case, unsafe driving behaviour may be due to attitudes towards various aspects of driving. Reason et al (1990) for example state that violations are one form of aberrant driving behaviour. These are deliberate acts by the individuals concerned, and involve a definite risk to others. It therefore seems that such behaviours may be determined by an individual's attitude towards driving. If this is the case, it may be possible to produce safer drivers by changing attitudes via training or advertising campaigns (such as drink driving campaigns).

Early studies of attitudes towards driving attempted to measure attitudes by directly asking a subject's attitude towards the aspects of driving that represented the most frequent causes of accidents. Attitude scales were developed that measured a subject's agreement or disagreement towards words such as "liquor parties" or sentences referring to the factors involved in driving such as passing on hills, corners, etc (Case and Stewart, 1956, Goldstein and Mosel, 1957). Results using these methods of attitude measurement have been inconclusive. For example, Case and Stewart (1957) note that research using these methods has not produced satisfactory results, whereas Goldstein and Mosel (1957) and Schuster (1968) found that by using such measures of attitude, accidents and violations could be predicted.

Case and Stewart (1957) used a more indirect technique whereby attitudes are inferred from responses on a scale. Actual descriptions from driving situations were given and subjects had to choose one of four alternative responses which most clearly reflected their own driving behaviour in the kind of situation described. It was assumed that the individual will choose the actions reflecting their underlying attitudes, which may or may not compare with the correct responses obtained from experts. However, whilst showing that attitudes were related to the number of traffic violations, by giving a limited set of choices of action the research may have eliminated the true choices of action that would be undertaken by subjects. In addition, the study concentrated on attitudes towards law and order rather than ordinary driving situations which may also cause accidents.

Recent studies have attempted to measure driver attitudes using similar direct techniques to earlier studies, getting respondents to fill in questionnaires whereby they score their driving performance in terms of a particular attitude (proven to be involved with accidents) and its polar opposite; for example, aggressive-defensive, insistent-yielding. Such attitudes are then be compared with the respondent's accident history (Clay, 1987, Daniels, 1988).

However, the problem with all the above approaches is that there is a tendency for respondents to score themselves in the most favourable manner, not readily admitting to possessing socially undesirable driving attitudes. This was noted by Daniels (1988) in his finding that "most drivers consider themselves neither aggressive nor defensive, decisive, neither irritable nor placid, confident, neither fast nor slow and considerate."

Recently, attempts have been made to measure attitudes towards driving by applying theories of attitude measurement and behaviour prediction (Chesham et al, 1989, Reason et al, 1991). However whilst these approaches have been able to measure attitudes towards various aspects of driving behaviour (for example, overtaking), the results may also have suffered from respondents scoring themselves in a favourable manner. In addition, the techniques adopted by the above research to measure the components of the theories used, could also have caused inaccurate measurements (see chapter 3, section 3.5). There is obviously a need for further research to discover how an individual's attitude towards driving can best be measured. This problem will be dealt with in more detail in chapter 3 and chapter 4 (section 4.1).

2.2.11 Thrill Seeking

Marsh and Collett (1986, p181-182) state that 'joy riding' is not undertaken for monetary reasons, but for the excitement achieved through speed and acceleration. The thrill experienced through acceleration is caused by a vastly increased state of arousal which the central nervous system translates into a number of emotional experiences which to some are intensely pleasurable. O' Neill (1991) reported a case of two 'joyriders' who wanted to experience the thrill of being chased by the police so badly that they threw a brick through a police station window. Individuals seeking thrill could cause accidents if they drive in an unsafe manner in relation to the road environment and their driving capabilities. This could explain why 'joyriders' are often involved in road accidents.

2.2.12 Risk Taking

Risk has been defined as "the ratio between some measure of adverse consequences of events and some measure of exposure to conditions under which those consequences are possible" (Brown and Groeger, 1988). Many theorists have postulated that risk

plays a crucial role in driving, whereby a driver will regulate 'his' behaviour, keeping the perceived level of risk below or at a limit of a given target level. A driver compares 'his' assessment of risk at any given moment in order to determine what actions should be taken. Risk is different to 'thrill' as it is undertaken during normal driving rather than when an individual seeks excitement or emotional arousal.

Many studies of risk taking have been undertaken, either by observation, or by a verbal assessment using scales of danger (Saad, 1988). Of the numerous theories that have emerged, one of the most influential is that of Wilde (1980) who noted that an individual's target level of risk is usually above zero, and is associated with some objective risk of an accident. As the target level of risk of an individual remains constant, any safety improvements aimed at reducing the risk of an accident (such the introduction of mandatory seat belt laws, highway, and vehicle modifications) will have little effect on the number of accidents, as people will change their behaviour in order to maintain their target level of risk. According to the theory, accidents can only be reduced by influencing an individual's perception of risk when driving.

Studies of risk taking have shown that perception of risk is related to road accidents. Risk and Shaoul (1983) for example have found a positive correlation between drivers who perceive a higher level of risk and their involvement in fewer accidents. In addition, Carthy et al (1993, p89) have shown that drivers inadequately perceive the risk of accidents that pedestrians are exposed to. Carthy et al (1993, p5-7) note that although drivers may assess risk when driving, other factors can override or interact with any assessment that occurs (for example, the influence of passengers on driving, see section 2.12). They therefore stress the importance to link attitudes with the assessment of risk in a particular driving situation (see section 2.210).

2.3 Physical Factors Common to All; Limitations in Processing Information

Signals from the outside world arrive at our senses and are transmitted to the brain where they are transformed into signals which elicit certain control actions. However, our natural capacity to process information does have limitations which are exacerbated when driving, as a great deal of information has to be processed in a short time period. Limitations have been discovered in the brain, the central nervous system, and the senses These will be dealt with respectively, relating them to the driving task.

2.31 Limitations of the Brain

The brain stores information it receives from the senses in the working memory and long term memory. The working memory holds information which a person is consciously attending to, and the long term memory contains all an individual's permanent knowledge. Whilst the capacity of long term memory is assumed to be unlimited (Howard, 1983, p21), the working memory of the brain is limited in capacity to between five and nine items of information at any given moment (Fishbein, 1967, Ajzen and Fishbein, 1980, p63), and can only hold items for approximately 15 seconds (Howard, 1983, p21). Items can be preserved in working memory by rehearsing them in our minds, but this occupies its limited capacity, preventing the processing of new information that is received (Reason, 1974, p118). This limitation may cause accidents in certain driving situations. For example, in busy traffic, too much information may be presented to the driver to be processed by working memory. Another example where this could cause accidents is at a junction, where a driver may enter a busy main road at the wrong time due to the picture of the road situation in one direction being lost while checking the opposite direction (Reason, 1974, p117).

Whilst working memory has its limitations, it is possible to maximise its utility by sorting the information stored so that only the important information is processed. Reason (1974, p120) notes that this ability improves with driving experience, due to information about the driving task being permanently stored in the long term memory. This information is used to decide what information in working memory needs to be processed.

The brain is also poor at detecting infrequent, irregular, and indistinct signals in monotonous and boring surroundings (Reason, 1974, p142). Under these conditions (such as during motorway driving), a driver may not be able to react, or only react to events sluggishly, possibly leading to the involvement in an accident.

2.32 Limitations of the Central Nervous System and the Senses

Over 90% of the information entering the brain that forms the basis of judgement during the driving task is acquired from our vision (Quimby and Watts, 1981, p2). What an individual hears and feels does provide additional information, although these play a subsidiary role (Reason 1974, p111). This discussion will therefore concentrate on the limitations of vision and the nervous system.

Denton (1966, cited in Reason, 1974, p88) has shown that an individual judges a vehicle's speed primarily by 'his' vision of the outside world, rather than upon the objective information provided by the speedometer. However Denton (1967, cited in Reason, 1974, p90) has discovered that without the aid of a speedometer, drivers underestimate their speed on decelerating, and overestimate their speed on accelerating. Schmidt and Tiffin (1969, cited in Reason, 1974, p93) discovered that the degree of error in speed judgement increased with the length of time previously travelling at a constant speed, and that the level of error is not constant or easy to predict. Many accidents could be caused by such an over reliance on inaccurate sensory information regarding speed.

This error in speed judgement occurs because the nervous system notices differences in our surroundings and ignores things that do not change. As working memory is limited in capacity, the nervous system gives high priority to sensory inputs reflecting change in the environment, and low priority to sensory inputs that do not change for lengthy periods of time. This decreases our awareness of unchanging sources of stimulation. While driving on a motorway at a constant speed, our visual impressions of speed will therefore gradually become less, making it feel much slower (Reason, 1974, p91).

2.4 Physical Factors Which Vary From Individual to Individual

2.41 Age

Young drivers are over-represented in road traffic accident statistics. Lewis (1985) for example states that American teenagers cause five times as many crash deaths in comparison to drivers aged between 35 and 64. Studies have shown that this is primarily due to:

1) More exposure to risky conditions such as driving at night or after alcohol (Cameron, 1982).

2) Limited experience making young drivers less aware of what is unsafe (Mc Michael, 1974).

3) Psychological characteristics that are related to crash involvement, such as viewing driving as a means of tension release, assuming an adult role, strong hostility and alienation, and positively evaluating speed and thrill seeking (Donovan et al, 1983, Fuller, 1988). Rolls and Ingham (1992) suggest that the disproportionate number of accidents involving young drivers may be due to a subgroup of young drivers with a particular, and dangerous attitude towards driving.

4) Conforming to social pressures to drive unsafely (such as peer group opinion) to a greater degree than older drivers (Lewis and Lewis, 1974).

Mc Farland (1966) states that old age may reduce driver performance due to a reduction in the acuity of sensory perception. However, these effects are generally modified by driving slower, drawing on experience, and avoiding hazardous driving conditions.

2.42 Sex

Donovan et al (1983) state that men are more frequently involved in accidents than are women, but when differential exposure was taken into account, women were slightly more likely to be involved in accidents than were men.

2.43 Vision

Although there have been cases of individuals being able to drive with defective vision for many years without having an accident (Selling, 1940), in general, individuals with defective vision may be prone to accidents due to an inability to see potential hazards in time to react to them. Burg (1967a, 1968c, cited in Forbes, 1972) found that poor static and dynamic visual acuity was positively associated with a poor driving record. Burg also discovered a decline in visual performance capabilities with advancing age.

Although a minimum standard of visual acuity is required by law to drive a vehicle, it has often been argued that this test is inadequate, and as a consequence, there may be many drivers with defective vision who may cause accidents. King (1992), on undertaking 8 different eye tests found that 20% of the drivers that were tested had eye defects. King concluded that the current method of eye testing is inadequate, and that there should also be changes in the law so that retesting is required every three years to combat any deterioration in vision that may occur.

Dawson (1990) claims that studies in Sweden and Canada have shown that at least 20% of the driving population suffer from low luminance myopia, which reduces visual perception in dim light, fog, and at night-time. This condition can lead to a deterioration in an individual's judgement of time and distance, and hence reduce the ability to safely undertake driving manoeuvres. This may explain high accident rates at twilight during the winter months. This condition can be overcome using special lenses. However, a special eye test is required which currently is not widely available.

These research findings indicate that accidents could be reduced if drivers had to undertake a more sophisticated eye test over regular time periods, to combat any deterioration that occurs. It is hoped that in the future that attention is given to this problem.

2.44 Psycho-physiological Processes

Studies of psycho-physiological processes such as galvanic skin response, pulse frequency, heartbeat, and eye movements have been undertaken, showing how they vary in different driving situations, and can be the cause of other factors affecting driving ability, for example, stress, fatigue (for a review, see the Organisation for Economic Cooperation and Development's report on driver behaviour. 1970).

2.45 Temporary Physical Factors

2.45.1 Fatigue/Tiredness

As monitoring the driving task requires continuous mental work, fatigue can occur, especially on long journeys. Reason (1974, p172) notes that fatigue while driving reduces the mental ability to integrate actions into the coordinated sequence. Fatigue disrupts the organisation of a skill by eroding the packaging of information that permits the brain to process the incoming sensory signals that are essential for the task. Kaluger and Smith (1970) found that fatigued drivers fixate their gaze on the nearside road edge, being totally absorbed with keeping the car on the road. Bartlett (1948, cited in Reason, 1974, p159-164) also discovered similar gaze patterns among fatigued pilots who were unaware that their standard of flying was decreasing. He explained that this was probably due the gradual loss of capacity in our short term memory. This could obviously cause many road accidents as the road ahead, road signs, and other road vehicles are ignored without the driver being aware that such a process is occurring. Mc Donald (1984) in analysing studies of truck and bus drivers found that they frequently experienced fatigue and that this was often the cause of accidents.

A report by the Royal College of Physicians (1993, cited in Mihill, 1993, p4) states that falling asleep at the wheel of a car is the most frequent cause of road accidents after drunkenness. It also states that tiredness experienced by long distance lorry drivers may be caused by obstructive sleep apnoea. This is a breathing difficulty which deprives the sufferer of adequate sleep, causing 'him' to be tired during the day. 80% of sufferers are male, and it is estimated that the condition affects 1% of middle aged men.

2.45.2 Drugs/Toxins

It has been shown in USA that the effect of alcohol on the central nervous system is the most common single factor involved in fatal accidents.(Buttingliere, et al, 1972, Donovan et al, 1983). Up to one half of traffic fatalities and one third of injuries from traffic accidents are related to alcohol use and the risk of a driver being involved in an accident increases as the level of alcohol in the driver's blood increases (Donovan et al, 1983). However Albery (1991, p15-21) notes that in Great Britain, the proportion of fatalities where a positive blood alcohol content was recorded has decreased from 31% in 1981 to 19% in 1989. In addition, there has also been a large reduction in the number of positive breath tests from 46% in 1981 to 21% in 1989. Albery notes that these trends may be due to changes in legislation since 1983 which introduced tougher penalties and evidential breath testing, leading to the enforcement of breath testing procedures to increase by 200% from 1981-1989. It would appear that the magnitude of the drink/driving problem has significantly decreased in Great Britain over the last ten years. This may reflect changes in attitudes towards drink/driving brought about by changes in legislation, and mass media publicity campaigns. Although the magnitude of the drink driving problem in Great Britain may have decreased in recent years, 15% of road traffic deaths and 6% of all injuries in Great Britain in 1991 were

associated with drivers and riders drinking over the legal limit (Department of Transport, 1992).

Klonoff (1974) has found that the smoking of marihuana has a detrimental effect on driving skill and performance. Chesher (1986) notes that alcohol and marihuana produce skill impairments in driving performance, which when combined have an additive effect, increasing impairment.

Rockwell and Balasubramanian (1975) have found that the toxins produced by motor vehicles (for example, exhaust fumes) can cause a major degradation in driving behaviour.

2.5 Level of Experience/Skill

As a driver becomes more experienced, 'he' generally becomes more skilful at the driving task, and is therefore less likely to have an accident. Hoinville et al (1972, p11) found that drivers with more experience are more likely to pass the driving test used by the Institute of Advanced Motorists than the less experienced. Malaterre and Saad (1980) found that novice driver's performance was inferior compared to that of experienced drivers. Novice drivers were found to have difficulties in judging distances when decelerating, taking in and using available information, and judging speeds without the use of the speedometer. Wong et al (1990) in a study of motorcyclists who had and who had not had accidents found that an individual's risk of having an accident declined with driving experience. Reason (1974, p121) states that with experience, the basic motor skills such as changing gears, braking, and steering become more and more automatic, giving an individual more capacity to process the information of the road situation ahead, and also capacity to draw upon in an emergency. This explains why hazard perception is strongly influenced by driving experience (Benda and Hoyos, 1983, Cavello and Laurent, 1988). An experienced driver is thus more aware of the potential dangers in the road ahead and can react to them more quickly, making 'him' a safer driver.

However, Duncan et al (1991) found that driving experience does not produce improvements in all driving skills, and only improves the skills that provide feedback of their performance. Motor skills such as gear changing and steering were found to improve with experience as an individual is given feedback from undertaking the task itself (for example grinding gears, jerky cornering etc). Perceptual skills such as anticipation and judgement of safety margins however deteriorated with experience, as only in a minority of occasions will negative consequences result from a failure to successfully undertake such tasks. These findings display the importance of retraining and retesting drivers after they have obtained a driving licence, as opposed to the current policy of leaving motorists unassessed over the bulk of their driving lives. In addition, these findings also show that advanced driver training could be effective in improving and combating any deterioration in driving skill, as such training generally focuses on improving the perceptual skills involved in driving.

2.6 Discussion

Whilst the analysis of the human factors affecting an individual's driving ability is not exhaustive, it can be seen that numerous factors can affect driving ability with there being no one individual factor that could explain all accidents where the driver is at fault.

However, it can be seen that many factors can be linked with driver attitudes or skill levels, or both these factors. For example:

1) Risk taking, thrill seeking, stress, and aggression are linked to driver attitude, often involving our attitude towards speed.
2) Limitations in the ability to process information can be improved if we possess the skills necessary to make best use of the limited capacity of the brain and central nervous system, and also to modify our driving to compensate for such limitations.

3) It could be argued that an individual's personality which is shaped by society, will be reflected in their attitudes. Thus all the societal and personality factors discussed will be reflected in our attitudes towards various aspects of the driving task.

4) There are some factors which initially appear not to be able to be affected by driver attitudes and skills, for example, physical factors. However training could improve road safety by making individuals aware of such limitations, so that they could compensate for them by altering their driving behaviour. For example, if you are made aware of the effects of fatigue and recognise the symptoms, you can take steps such as having a break from driving to avoid the possibility of having an accident. Having an awareness of such limitations is a skill taught on most advanced driver training programmes. Also, knowing the effects of physical factors such as fatigue will change our attitudes towards them when experiencing them.

It therefore seems that driver skills and driver attitudes are key factors that should be studied to evaluate the effectiveness of advanced driver training. Concentrating research on driver attitudes will also be beneficial as further research into attitude measurement techniques and methods of data collection is required (see section 2.2.10).

If a drivers attitude and skill level can be improved by a programme of advanced driver training, it could significantly improve road safety, as these two factors link with so many other human factors affecting driving ability. It would therefore seem that it is possible to improve road safety with advanced driver training, if such training programmes develop appropriate attitudes towards road safety and driver skills.

2.7 Summary of Chapter 2

The human factors affecting driving performance have been outlined, and the value of advanced driver training (such as that used by the police) in overcoming such factors has been established. The concentration of the thesis on driver attitudes and skill levels has also been justified.

In the next chapter, an analysis will be made of theories that can be applied to the measurement of attitudes.

CHAPTER 3

ATTITUDE THEORY AND THE PREDICTION OF DRIVING BEHAVIOUR

3.0 Introduction

From chapter 2 it can be seen that our attitude towards driving could be a major factor in determining our accident liability. It can also be seen that there has been little recent research undertaken on attitudes and driving, and what research that has been undertaken may have suffered from response bias, or have not adopted current theoretical methods of measurement. As chapter 2 only gave a general description of attitude research, this chapter will provide a more detailed analysis of the concept of attitude, and establish whether it is possible to measure driving attitudes using the most current theoretical methods. The chapter will be divided into the following sections:

1) The concept of attitude, its measurement, and the development of Ajzen and Fishbein's (1980) theory (the most commonly used method of measurement).

2) Ajzen and Fishbein's Theory: Can it be theoretically applied to predict driving behaviour?

3) Ajzen and Fishbein's Theory: Are any modifications necessary?

3.1 The Concept of Attitude

Although a variety of definitions have been offered, there is a general consensus that an attitude is a "learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object" (Foxall, 1983, p41). An attitude is the meaning an individual attaches to their expressive behaviour (Eiser, 1980, p19) and it affects the way an individual judges and reacts towards other people, objects, and events. It can be argued that everything in life depends on people's attitudes (Oppenheim, 1984, p106). Attitudes are lasting feelings and tend to persist across time although it is possible to change attitudes through the acquisition of new information about the attitude object or behaviour. However attitudes that are associated with an individual's central values tend to be more resistant to change (Vaughn, 1977, cited in Epstein, 1980, p123).

Attitudes are learnt through socialisation (or conditioning), the process by which a baby is transformed into a responsible and capable member of society; whereby attitudes are acquired from parents, teachers, friends, acquaintances, etc. They are also learnt by direct experience of the attitude object or behaviour by an individual (Baron and Byrne, 1987, p117-119).

A major reason for the formation of attitudes is to help reduce information overload. Attitude formation is a strategy for quickly processing information to make everyday activities less complicated. For example, in deciding whether to buy a particular product brand, we do not have to recall everything we know about a brand, rather,

we simply refer to our attitude, which is our general evaluation. The formation of attitudes thus aids individuals in future decision-making (Baron and Byrne, 1987, p119).

3.2 Attitude Measurement

As it is theorised that attitudes predispose an individual to behave in a particular manner, a vast amount of research has been undertaken to measure attitudes so that future behaviour can be explained and understood. Measurement has been based on the notion that attitudes can be described in a similar manner to the way a person's height and weight can be described, and can thus be placed on some scale or continuum. Scales of attitude measurement seek to compare people in terms of their positive or negative evaluation of a given object or behaviour.

Attitude surveys generally aim to measure attitudes by getting respondents to fill in a questionnaire in which they have to rate on a scale their agreement or disagreement with a statement or a series of statements about the object or the behaviour in question. The following is an example of how attitudes towards motorway speed limits can be measured:

The Motorway speed limit should be increased to 80mph

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

Responses to such statements and scales are assumed to comprise an individual's attitude toward an object or a behaviour. If the scale is rated at either extreme, then the respondent is assumed to possess the attitude to a greater degree. The greater degree that the attitude is held, the greater the likelihood that the attitude will affect future behaviour, as it is assumed to be more central to the individual's value system.

3.3 Overcoming Problems of Attitude Measurement: The Development of Ajzen and Fishbein's Theory (1980)

For many years, the assumption that attitudes determine behaviour remained unverified by attempts to measure attitudes. Festinger (1964) found little consistent research to show that attitudes and behaviour were directly related. Wicker (1969) noted that attempts to predict overt behaviour from verbal measures of attitude were only occasionally successful, producing only low and non significant attitude-behaviour relationships.

Since the late 1960's, interest has re-emerged with research concentrating on theoretical models that had been developed to provide a better understanding of the links between attitudes and behaviour. These models looked at the components of attitudes, some also looking at other factors which may determine behaviour. It was from these models that new models emerged which largely overcame the problem of attitude-behaviour consistency. The models which have had the most significant impact on attitude-behaviour research will now be dealt with respectively.

Festinger's Cognitive Dissonance Theory (1957) stated that holding two beliefs that conflicted with each other causes a psychologically unpleasant state called dissonance which people try to remove by changing one of the cognitive elements. Thus when someone's beliefs conflict with their attitudes or their behaviour conflicts with their attitudes, an individual will try to reduce the resulting dissonance either by changing their behaviour or their attitudes.

Rosenberg (1960) believed that through experience we learn that we can act more effectively when our attitudes and beliefs are consistent, and thus have a need to maintain consistency between the affective (overall positive or negative response to an object) and cognitive (beliefs about the potentialities about the attitude object for attaining or blocking the realisation of valued states) components of our attitudes. If these two components conflict, the need for consistency will produce changes to bring them in line with each other.

Mc Guire (1960) noted that we are consistent in our responses due to the way we logically process information. An individual, on reviewing 'his' beliefs will tend to change some of them so that they are more logically consistent, irrespective of any external pressures.

Dulany's Theory of Propositional Control (1961) noted that inconsistencies in the prediction of behaviour from attitudes were caused by the use of general types of behaviour, rather than more precise and specific types of behaviour. The immediate antecedent (or forerunner) of overt behaviour was a person's behavioural intention to perform a specific act in a specific situation, and that the more abstract or generalised the intention becomes, the lower will be its correlation with a specific behaviour. Based on whether an individual will make a verbal response, Dulany's theory stated that behavioural intention was determined by two factors:

1) A subject's hypothesis that the occurrence of a particular response will lead to a certain event, and a subject's evaluations of those events (A concept similar to attitude).

2) A subject's beliefs with regard to what 'he' is expected to do in a particular situation, and 'his' motivation to comply with what 'he' should do.

The main ideas of these early models were used by Fishbein and Ajzen (Fishbein, 1971, Fishbein and Ajzen, 1975, Ajzen and Fishbein, 1980) in the construction of a theory which has been refined and modified with continued research. The Theory of Reasoned Action (Ajzen and Fishbein, 1980) is the most prominent of models that has developed from the earlier research as it offers a single theoretical framework from which virtually all types of volitional human behaviour can be explained, rather than a theory that could only describe certain types of behaviour.

The theory assumes "that human beings are usually quite rational" and that "people consider the implications of their actions before they decide to engage or not to engage in a given behaviour" (Ajzen and Fishbein, 1980, p5). They state that the determinant of behaviour is the intention of an individual to perform the behaviour in question. The stronger the intention, the more a person is expected to try to undertake a particular behaviour, and hence the greater likelihood that the behaviour will be performed. The intention to perform a behaviour is determined by two factors:

1) <u>Attitude Towards the Behaviour</u>

This refers to the degree to which a person has a favourable or unfavourable evaluation of the behaviour in question. However, unlike earlier research on attitudes, this concept follows Dulany's theory (1961, 1964) and measures a particular behaviour, under a given set of circumstances, rather than a general attitude object. The rationale for this was given by the example of a woman who might have a positive attitude towards high pile carpeting, but this attitude would certainly not influence her behaviour if she had two dogs, a cat, and three children under nine. The attitude towards performing the behaviour is hypothesized to be a function of the

beliefs that an individual has that performing a behaviour will lead to a particular consequence, and a person's evaluations of those consequences. This can be seen in the following expression:

$$A_{act} = \sum_{i=1}^{n} b_i \, a_i$$

where:

A_{act} = Attitude towards a specific behaviour

b_i = Belief that performing the behaviour will lead to consequence i

a_i = The person's evaluation of consequence i

n = Number of beliefs

For example, an individual's beliefs about buying a particular make of car might be that it was cheap, easy to maintain, and was economical. If these beliefs were scaled as being positive, along with positive evaluations that each belief led to a particular consequence, then the individual would have an overall positive attitude towards buying the particular car.

2) Subjective Norms

Subjective norms are the perceived social pressures to perform or not to perform the behaviour. These are a function of a person's beliefs that specific individuals or groups think 'he' should or should not perform the behaviour, and the motivation to comply with what these groups or individuals say. These are assumed to be independent of a persons own attitude toward the behaviour in question. This can been seen in the following expression:

$$SN = \sum_{i=1}^{n} b_i \, m_i$$

Where:

SN = Subjective norm

b_i = The normative belief

m_i = Motivation to comply with referent groups

n = Number of referent groups

Attitudes and subjective norms, each weighted for their relative importance are assumed to jointly determine behavioural intentions. This can be seen in the following formula:

$$B \approx BI = (A_{act})_{W0} + (SN)_{W1}$$

Where:

B = Behaviour

BI = Behavioural intention

w^0, w^1 = Empirically determined weights

Other personality, social, and demographic characteristics are not considered as these are assumed to influence the attitudes and subjective norms that a person holds, and the relative importance attached to each. The theory thus takes into consideration all the possible human factors that determine behaviour.

Ajzen and Fishbein (1980) have produced strong evidence to show that by using this model, it is possible to determine how an individual will behave in a given situation. The model has also been empirically tested by many other researchers, who have successfully applied it to a wide variety of behaviours such as seat belt use (Budd et al, 1984), smoking (De Vries and Kok, 1986), water conservation (Kantola et al, 1982), choice of infant feeding method (Manstead et al, 1984), and use of drugs (Lacy, 1981). The model has thus largely overcome the problem of attitude-behaviour consistency.

3.4 Ajzen and Fishbein's Theory (1980): Can it be Theoretically Applied to Driving Behaviour?

As Ajzen and Fishbein assume all action to usually be reasoned (1980, p5) it should be possible to explain driving behaviour by using the theory of reasoned action. However, Ajzen and Fishbein later note "that there are likely to be some human behaviours that cannot be explained by a theory of reasoned action. Among these behaviours are emotional outbursts and performance of well learned skills, such as turning the pages of a book or driving a car. There may also be certain individuals for whom the theory does not apply; some people may arrive at their decisions in different ways."(1980, p245)

It would seem that Ajzen and Fishbein recognise that driving, along with some other actions is in fact unreasoned and as such cannot be explained by their theory. However, this conclusion is arrived at without explaining why such actions are unreasoned, and it may well be that driving behaviour is in-fact a reasoned action. It is therefore necessary to undertake a more in-depth analysis of how decisions are made to establish whether the theory of reasoned action can be used to explain driving behaviour. Numerous approaches have been made to this topic. The most influential will now be outlined, relating each to Fishbein's theory and driving behaviour.

3.41 Theories of Analytic and Intuitive Thinking

Bruner (1960) states that analytic thinking occurs via a step by step process and the individual has a relatively full awareness of the information and processes involved. Intuitive thinking however involves an implicit perception of the total problem whereby an individual arrives at an answer to a problem with little awareness of how the answer was reached.

Hogarth (1980) notes that choices and judgements are usually made intuitively, without apparent reasoning. This occurs because the human brain cannot process information rapidly enough to continuously make analytic decisions. If this is the case, what leads to the development of intuitive thinking and how can decisions be made without apparent reasoning and conscious awareness? According to Bruner,

intuitive thinking requires familiarity of the task being undertaken. He notes that experiments of learning show that in order to operate intuitively with materials, an individual must possess a mastery of the materials. Hogarth noted that choices and judgements made via intuition have been acquired under conditions where their adequacy has been tested. For example, a familiar driving task like judging the distance needed to slow down in traffic involves memory of similar situations which triggers off the correct responses for the actions. It is thus through experience that intuition is acquired.

In terms of Ajzen and Fishbein's model, behaviours based on intuition (unreasoned) have been acquired through experience and are based on the formation of attitudes and subjective norms through reasoned action, when faced with similar problems on previous occasions. This information has been stored in memory. Thus, although we are not consciously aware of our attitudes and subjective norms when we make intuitive decisions in a particular situation, they will nonetheless determine how we behave.

3.42 Information Processing Theories (Cognitive Psychology)

Whilst there is disagreement about the precise form of processing, these theories all state that human information processing consists of three memory systems, namely sensory registers, working memory (short term), and long term memory:

1) The sensory registers are limited in capacity and can only hold information for less than a second (Howard, 1983, p20).

2) The working memory holds information which a person is consciously attending to, is limited in capacity to between five and nine items of information at any given moment (Ajzen and Fishbein, 1980), and can only hold items for approximately 15 seconds if they are not rehearsed. If they are rehearsed they can be held in working memory indefinitely (Howard, 1983, p21).

3) The long term memory contains all an individual's permanent knowledge and its capacity is assumed to be unlimited, with information stored here never being erased. (Howard, 1983, p21). Forgetting is not caused by information becoming erased over time, but because of difficulties in finding or retrieving material that has been stored (Howard, 1983, p21).

Shiffrin and Schneider (1977), after conducting a series of experiments concluded that human cognition consists of two different types of information processing:

1) Controlled Processing

This uses the working memory to consciously process information. As the working memory only has a small capacity, there are limitations on the amount of controlled processing that can take place at any particular time. Most controlled processing thus occurs in sequence, with the outcome of one process used to help the person decide which processes should be applied next. Controlled processes can be adopted quickly, and can be modified fairly easily. An example of controlled processing used when driving would be trying to navigate to an unfamiliar destination by following roadsigns.

Although the majority of controlled processing is available to conscious perception, there are some which occur unconsciously (veiled controlled processing) and are difficult to modify through verbal instruction; for example, understanding language.

2) Automatic Processing

Automatic processing utilises a relatively permanent set of associative connections in long term memory, which have previously been learned. This processing is effortless, occurring simultaneously rather than sequentially, without the necessity of active control or attention by the individual. Once learned, these processes will be difficult to suppress or alter; and having been initiated, are assumed to continue to completion without the control of the subject.

Shriffin and Schneider have discovered that learning (the formation of a permanent memory of information which previously did not exist) can only be achieved through controlled processing or attention, and that considerable experience is required for automatic processing to occur. Bargh (1984) also cites numerous examples of studies of attention that demonstrate this.

With experience, many tasks that seemed to require attention become automatic. This is due to the formation of a permanent memory of information stored in the long term memory, initially acquired via controlled processing. For example, learning to drive initially requires controlled processing. Full attention must be given to the task, and any other attention demanding task cannot be performed without disrupting the driver. However, with practice, many components of driving seem to become automatic, with controlled processing required only in unusual cases. Thus, learning involves the transfer of information from the short term memory to the long term memory, and hence a change from controlled processing to automatic processing.

Most everyday activities are assumed to involve a mixture of both types of processing, and both can occur simultaneously. For example, whilst driving a car, automatic processing may determine how we perform well learned skills (such as the use of the gears and the steering wheel), while controlled processing may be used for the planning and decision-making aspects of driving (such as deciding when and where to overtake a vehicle).

Although there are numerous theories of information processing, there is a general agreement that new information is stored in the long term memory only if it has been placed in the working memory and given conscious attention.

In terms of Ajzen and Fishbein's model, behaviours based on automatic processing (unreasoned) have been acquired through controlled processing (largely reasoned) and are based on the formation of beliefs and subjective norms via conscious awareness of similar problems on previous occasions. Thus even automatic actions have at some stage been reasoned, and are based on our attitudes.

Evidence that an individual's attitude can be activated spontaneously without conscious effort upon observation of the attitude object or behaviour has been provided by Fazio et al (1986). In a series of experiments examining automatic activation of attitudes, Fazio et al concluded that attitudes may be automatically activated from memory; however such activation requires the existence of a strong association between the attitude object or behaviour and the evaluation. For this to occur, there needs to be a well learned set of associations or responses. As driving is usually a well learned and practiced behaviour, our attitudes with regard to driving can hence be activated automatically without our conscious awareness, and will thus

determine our driving behaviour. For example, an individual having learnt how to drive a car usually is not consciously aware of when they last changed gear or applied the brakes.

3.43 Theories of Socialisation (Conditioning)

Sociologists believe that at birth a human being has no instincts that program us to behave in a particular way and has to learn the behaviour patterns necessary for living in a particular society (Haralambos and Heald, 1983, p2). This process is called socialisation and involves the conscious learning of behaviour. This initially takes place in the family, with other agencies (for example, the education system, the peer group, and the occupational group) becoming important in socialising as an individual grows to adulthood (Haralambos and Heald, 1983, p4).

Socialisation involves the learning of social action, which is behaviour characterised by meaning, rather than mans purely animal behaviour (Weber, 1964, cited in Worsley, 1977, p44). Weber notes that this type of behaviour is conscious and involves cognitive knowledge and evaluations of experiences as good or bad. Social action is affected by past experience of similar situations, and also by what is occurring at present, and our estimates about the future.

As the process of socialisation is learned, involves conscious awareness, and governs all our behaviour, all our actions have been reasoned at some stage during our lives, and we use such reasoning to predict present and future events. Thus, when an individual drives a car, the most important socialisation agent affecting that individual will strongly determine their beliefs and attitudes towards driving. This has been found to explain why young adolescents have accidents, with peer pressure influencing the involvement in high speed driving (Ingham, 1991, see chapter 2, section 2.12). In terms of theories of socialisation, Ajzen and Fishbein's theory can therefore be used to explain driving behaviour.

3.44 Summary

Although the approaches which have been outlined have been taken from differing disciplines within the social sciences, there does however seem to be a common agreement that virtually all actions have been reasoned at some period during an individual's life, and that such reasoning is called up to conduct current behaviour. It would therefore seem that Ajzen and Fishbein's model can be applied to predict driving behaviour, as such behaviour is being reasoned, despite the individual not always being consciously aware that such reasoning is occurring.

Although the approaches outlined are based on empirical research, some might argue that further investigation is required if the theory of reasoned action is to be applied to driving. However, concrete evidence regarding what actions have been reasoned during driving will be extremely difficult to obtain. If an individual is asked for the reasoning governing a particular behaviour, and whether they were conscious of such reasoning (assuming they tell the truth), deciding what processes occurred and what was conscious would be a difficult task. Responses to such questions in the past have been influenced by the way in which questions are phrased and what the subject thinks the experimenter wants to hear (Howard, 1983, p21). It therefore seems adequate to use the above approaches as justification for applying Ajzen and Fishbein's theory to driving, as there is currently little evidence to disprove them, and no easy way to provide further concrete evidence.

3.5 Ajzen and Fishbein's Theory - Are any Modifications Necessary?

Since its development, numerous researchers have modified Ajzen and Fishbein's theory in an attempt to increase its predictive power. Many new insights into the problem of attitude-behaviour consistency have been uncovered by such research. The most important modifications will now be outlined and an evaluation will be made as to whether these modifications should be used in future applications of the model.

3.51 Salient Beliefs

Ajzen and Fishbein believed that the beliefs held by an individual about an attitude object or behaviour formed a hierarchy, whereby the higher the position of the belief in the hierarchy, the stronger that belief would be held, and that these stronger beliefs would be the first beliefs elicited from an individual (Cronen and Conville, 1975). In addition, on the basis of human information processing capacity (whereby only between 5 and 9 items of information can be processed by short term memory at a given time) an attitude will be a function of only those 5-9 beliefs at the top of the hierarchy occupying short term memory at a given time (salient beliefs). Therefore in collecting an individual's beliefs, Fishbein (1967) assumed that only the first 5-9 beliefs mentioned by a respondent should be considered to comprise an attitude. This procedure is inappropriate because:

i) It is debatable whether the strongest held beliefs with regards to an attitude object or behaviour are the first 5-9 beliefs elicited from a respondent. Cronen and Conville note that research using Fishbein's measure of belief strength (whereby beliefs were freely elicited from respondents) generally does not predict the order of belief elicitation.

ii) The procedure does not consider the fact that individuals may continually refer to long term memory which has tremendous capacity (Reason, 1974, see section 2.331 and 3.42), thus extending the number of beliefs available. For example, an individual may elicit 5-9 beliefs from long term memory and pay attention to them in short term memory, stating them to the researcher. 'He' may then refer back into long term memory making available any other beliefs that are stored about the attitude object or behaviour that can also be given attention. The degree to which this occurs will vary from individual to individual and the time given to elicit beliefs which varies from study to study (for example, see Hewstone and Young, 1988).

iii) Simon (1974) has shown that the short term memory is capable of storing information in chunks. A number of beliefs could thus be stored in a chunking unit, increasing the total number of beliefs available in short term memory ant any particular time. Hence, even if an individual does not continually refer to long term memory, 'he' is capable of eliciting a large number of beliefs from short term memory if they are organised into chunks.

It has therefore been decided that rather than only recording the first 5-9 beliefs stated, every belief that is recalled by an individual should be used, and that these should be assumed to comprise the beliefs that are salient to that particular individual, at that particular moment in time.

3.52 Modal Salient Beliefs

In addition to using salient beliefs, tests of the model usually rely on asking subjects about beliefs supplied by the experimenter. These beliefs are based on the most frequently stated beliefs of a pilot sample of subjects and are termed modal salient beliefs. This procedure is inappropriate because it assumes that each person being studied possesses the same set of beliefs (Towriss, 1979, 1981, 1984). As every individual in a given population is likely to have different socialisation patterns due to sub-group membership and different personal experiences, it is unlikely that they will have the same set of beliefs. Thus the use of modal salient beliefs implies that individuals will have to respond to belief items which to them are not personally relevant. This might cause the recording of belief strength and the evaluation of a belief for a belief that may never have previously existed for an individual; such as Converse (1970) suggests occurs with attitudes, when subjects are presented with a series of attitude statements (see section 2.55). This will therefore cause an inaccurate measurement of attitude and could lead to poor predictions of behaviour. The problems associated with modal salient beliefs have been investigated by several authors. Thomas and Tuck (1975) found that a modal set of beliefs was a better predictor of attitude than an individual's own beliefs when using Fishbein's original expectancy value model. However Cronen and Conville (1975) on using the same model criticised the use of modal beliefs, discovering that modal beliefs falsely validated the concept of belief strength (see section 2.53). Cappella and Folger (1980) noted that free elicitation strategies are a crucial methodological requirement in attitude-behaviour studies. Towriss (1979, 1981, 1984) has successfully applied the principle of individual supplied beliefs to Ajzen and Fishbein's (1980) Theory of Reasoned Action and has improved the model's ability to predict behaviour.

It is therefore suggested that researchers should use the number of individual beliefs that are recalled by an individual to determine attitudes, rather than record responses to a set of modal salient beliefs.

3.53 Belief Strength and Evaluation of the Belief

Cronen and Conville (1975) undertook 3 studies of attitudes using modal salient beliefs and individual salient beliefs. They discovered that belief strength only improved the model's predictive power when modal salient beliefs were used. They conclude that "summing the affective values across each subjects own salient beliefs" was a simpler and better predictor of attitude, and that belief strength did not represent individual cognitive processes, and was merely "an artifact of the employment of standard belief lists."

However, as this is the only study that has been found to concentrate on this issue, it is too premature to eliminate belief strength from the model. Also, Cronen and Conville did not provide any evidence to explain how belief strength does not represent cognitive processes.

3.54 Subjective Norms

The inclusion of subjective norms in the theory can be contested as it can be argued that the influence of perceived social pressures caused by specific individuals or groups will directly determine an individual's attitude; meaning that there is no need to again record these factors in an additional concept. This argument can be supported by the following theoretical and empirical research of attitudes, social interaction, and group processes:

i) It has already been noted in section 2.1 that one way attitudes are learnt is through socialisation, whereby attitudes are acquired from parents, teachers, friends, acquaintances, etc. To elaborate on this point, it is useful to note the work of Mead (Strauss, 1964) who believed that the human mind was essentially a social product, and is only developed through human experience via interaction among individuals. An individual's experiences and personality are built up out of our relationships with people whose behaviour has social importance or consequences for us (called our "significant others"). Also, to become responsible members of a community, an individual had to take the attitude of the other members of the group to which he belonged. We therefore take all other's attitudes into account to develop our general attitude. In terms of Ajzen and Fishbein's model, it seems inevitable that people important to an individual will influence that individual's attitudes due to the importance that Mead (Strauss, 1964) perceived interaction had in an individual's attitude formation and self development. Thus, our attitudes towards the way we drive will be affected by the people who are currently important to us and this will be reflected in the beliefs we have about driving.

ii) Experiments of group pressure and influence by Asch (1955) and Deutsch and Gerard (1955, cited in Hogg and Abrams, 1988) show that expressed opinions relate to social pressure to conform to group judgements. Deutsch and Gerard suggest that people have a fundamental propensity to take other people's opinions into account and that group influence can cause private acceptance and internalisation of beliefs and attitudes. Foxall (1977) also noted that the influence of other people can cause changes in beliefs, motives, attitudes, values, knowledge and conceptions of the world, which can manifest themselves in behavioural change. Baumeister (1982) found that although behaviour can be modified by pressure from social groups, such pressure may also cause people to modify the attitudes which they express. Thus, although behaviour can be modified by social pressure, such a change will be reflected in the attitudes given in a particular situation. The conclusions drawn indicate that the influence that social groups have on an individual, will be reflected in the attitudes and beliefs held by that individual, meaning that there may not be a need for the inclusion of Ajzen and Fishbein's subjective norm concept.

iii) In a two year longitudinal study of group interaction of people who had previously never met, Newcomb (1961) found that as individuals acquired more information about each other's attitudes, they tended to become attracted to people possessing similar attitudes. This finding implies that the people who become important to us will share similar attitudes. If similar attitudes are shared, then the inclusion of subjective norms is unlikely to contribute to the predictive validity of the model, as perceived social pressures to perform a behaviour should be the same as the attitude towards performing the behaviour.

iv) If individuals are influenced by others, they will not admit it in the subjective norm component of the model as people do not like to be seen to behave in ways that are contrary to what they have asserted their feelings to be (Baumeister, 1982). Thus, if subjective norms affect behaviour independently of attitudes and beliefs, it will not be measured correctly due to respondents' unwillingness to admit to such influences on behaviour.

v) Towriss (1979, 1981), in applying the Theory of Reasoned Action to spatial planning and car purchasing, noted that the positive relationship between attitudes and subjective norms that was found could have been due to people

important to them sharing the same value system, whereby the normative beliefs act as another measure of attitude. Because attitudes and subjective norms may not independent of one another, the size of the weights used in the model to determine the importance of each variable cannot be accurately calculated. Due to these problems Towriss questions the use of subjective norms in the model.

vi) Miniard and Cohen (1981) demonstrate how subjective norms are in fact recorded in the attitude component of the Ajzen and Fishbein model. They note that the belief that "my child thinks I should buy sugerpuffs" would be recorded in the subjective norm component of the model since it refers to a referent's expectations. However, the belief that "buying sugerpuffs will please my child" would not be regarded as a subjective norm as it does not contain an explicit referent's expectation and would be recorded as a belief that comprises the attitude component of the model. Both these sentences may however reflect the same belief with regards to the child's reactions, and thus represents an overlap in the model. Miniard and Cohen displayed this weakness by measuring attitudes towards buying a dress using a role playing exercise, whereby subjects were given accounts of a person and her friend shopping and asked to pretend to be the person who was deciding whether to buy a dress. The accounts stated that the person personally liked the dress, but the friend liked the dress in some accounts and disliked the dress in others. It was discovered that by manipulating a referent's influence potential, the subject's responses to the attitudinal as well as the subjective norm measures (with regards to purchasing the dress) was affected, thus showing that subjective norms measures are included in the attitude component of the model.

Due to the evidence cited, it is suggested that the concept of subjective norms should be excluded from the model. Although this excludes a large element of the model, it is worth noting that Ajzen and Fishbein (1980) themselves imply that the subjective norm may be a weak element of the model, stating that "we are not at all certain that the measure of subjective norm proposed in this book is the best way of directly assessing perceived social pressure to perform or not to perform a behaviour" (p246).

3.55 Additional Variables

Although there have been numerous additional variables included in the model (for example see Bagozzi, 1988), the most influential and empirically validated is the concept of self efficacy. This was initially developed by Bandura (1977) who believed that cognitive processes could be changed by the experience of effectively performing a task. Self efficacy refers to a person's beliefs about being capable of performing specific behaviours in specific situations (De Vries et al, 1988). De Vries et al explains the concept by giving the example of dieting, whereby someone may have a positive attitude and subjective norm about dieting, but negative expectations concerning the skills needed to undertake a diet. This could similarly affect the performance of advanced driving manoeuvres, whereby an individual would not undertake such a manoeuvre if 'he' personally felt that 'he' did not possess the skills required to undertake the task. It has been found by several authors that the inclusion of this concept does improve behaviour prediction (for example, Ajzen and Madden, 1986, De Vries et al 1988, Dzewaltowski, 1989). Parker et al (1992), using the approach adopted by Ajzen and Madden (1986) have demonstrated the usefulness of the concept of self efficacy in understanding driver behaviour. The research cited suggests that this concept is very important in determining behaviour that involves the acquisition of knowledge or skills and should therefore be included in the model.

3.56 Modified Model

The review of research suggests that several modifications to the Theory of Reasoned Action are necessary to predict behaviour. These are represented in the following formulae:

$$B \approx BI = f\,(A_{act\ w^0}\ SE_{w^1})$$

Where:

B	=	Behaviour
BI	=	Behavioural intention
f	=	Function of
A_{act}	=	Attitude towards a specific behaviour
SE	=	Self efficacy, the belief about being capable of performing specific behaviours in specific situations.
w^0, w^1	=	Empirically determined weights

At present, it is unclear whether the concept of self efficacy should be an additive or multiplicative inclusion to the model as current research has not considered including it on a multiplicative basis. It is suggested that both methods be used to discover what difference this makes to results.

The modified model reduces the number of questions that a respondent is required to answer. This will probably improve the reliability of the results obtained, as it is possible that respondents will get confused and annoyed when asked a large number of similar questions (as was required for the original model), giving hasty answers with little thought to get rid of the researcher. Budd (1987) notes that the similarity of the questions asked in the original model can cause response bias and has found evidence to suggest that self presentational concerns motivate people to increase the degree of consistency they report between the model's components. The modified model is far more simplistic, and less time consuming, which may lead to respondents giving much more thought to their answers, and hence be a far more accurate predictor of their behaviour.

3.6 Summary of Chapter 3

This chapter has demonstrated that it may be possible to measure attitudes towards driving using a modified version of the most widely used and empirically tested theory of attitudes (Ajzen and Fishbein's Theory of Reasoned Action 1980).

The next chapter will outline the research methodology that will be used to evaluate the effectiveness of police driver training on attitudes, beliefs, and skills.

CHAPTER 4

THE RESEARCH DESIGN AND METHOD

4.0 Introduction

In this chapter, the methodology that was used to evaluate the effectiveness of the two phase Standard/Response advanced driver training course of the Essex Police will be explained. As stated in chapter 1 (see section 1.4), phase one is a four week standard driving course, and phase two is an additional two weeks intensive training in emergency response and containment tactics for those who perform well (qualifying as class three drivers) on the standard course. Part of the additional two weeks is undertaken on a road testing circuit consisting of different road surfaces. This element of the course is designed to make trainees become aware of how a car will perform on such surfaces, and also to become more aware of the limitations of their vehicles and their own skills/abilities. Following the recommendations of the ACPO report (1989), phase two of the training also aims to emphasise a calm mental approach towards such driving. This is to ensure that drivers do not become over-excited from the rush of adrenalin which can occur at high speeds, possibly leading to dangerous and irrational driving manoeuvres. Police officers who successfully complete phase two of the training are allowed to undertake pursuits, and also to drive with flashing blue lights in an emergency while on police duty. The content and objectives of the Standard/Response course can be seen in appendix 1.

Everyone who joins the Essex Police and who holds a standard driving licence usually undertakes the Standard/Response course. The training is given approximately six months after an individual completes the initial two years training that is required to qualify as a constable.

The methodology of the research can be divided into the following sections:

1) Measurement of Trainee Drivers Attitudes.

2) Measurement of Trainees' Driving Skills.

3) Measurement of the Stability and Longevity of Trainees' Attitudes and Driving Skills.

4) Instructor Research.

5) Police Recruitment Research.

6) Piloting the Questionnaires used in the Research.

Each section will be taken in turn and the methodology will be explained.

4.1 Measurement of Trainee Drivers' Attitudes

On reviewing the methods available to evaluate driver behaviour, it has been decided to measure trainees' attitudes towards driving using self completion questionnaires. Although the ability of questionnaires to record information accurately depends

completely on respondents' willingness and/or ability to produce meaningful responses, they do provide concrete measures of attitude which can facilitate the application of theoretical models (for example, Ajzen and Fishbein, 1980), and to compare differences before and after training.

Whilst it has been established in chapter 3 (section 3.56) that the most appropriate theoretical method of measuring attitudes towards driving is by using a modified version of Ajzen and Fishbein's Theory of Reasoned Action (1980), it has also been decided to adopt other techniques of attitude measurement. This is because:

1) If similar results are obtained using different methods, the validity of the conclusions drawn from the research are strengthened.

2) As each method may elicit different beliefs regarding driving, the use of more than one method of attitude measurement may provide a more comprehensive evaluation of trainees' overall attitudes towards driving.

It has therefore been decided that in addition to using a modified version of the Theory of Reasoned Action (Ajzen and Fishbein, 1980), attitudes will also be measured towards driving using a more straightforward direct and semi-direct technique of attitude measurement via questionnaires.

4.11 Direct and Semi-Direct Technique of Attitude Measurement

It is possible for an individual to have numerous different attitudes towards driving; for example, attitudes towards the wearing of seat belts, attitudes towards obeying the highway code, attitudes towards other road users etc. However, not all the attitudes we possess cause unsafe driving. This element of the research therefore aimed to concentrate on the attitudes that were most likely to cause unsafe driving, to establish the degree to which trainees possessed such attitudes before and after driver training using direct and semi-direct questioning. To discover what attitudes should be focused on, primary research has been undertaken, interviewing driving instructors, and observing police response driver training.

4.11.1 Driving Instructor Interviews

A series of informal interviews with police and ambulance driving instructors was conducted in September 1990 to discover what were the common types of potentially dangerous behaviour exhibited by trainee drivers at the beginning of their course of instruction. All instructors interviewed taught the advanced driving technique used by the police (Roadcraft, 1977) to trainees that had passed the Department of Transport standard driving test. Fifteen police and ambulance driving instructors from Bedford, South Wales, and Essex were interviewed.

On analysis of the interviews (see appendix 2), it has been discovered that the most frequently mentioned types of potentially dangerous behaviours are poor observation, basic motor skills, speed, and information processing. These behaviours were undertaken because the drivers either had inadequate skills, inappropriate attitudes, or a combination of inadequate skills and inappropriate attitudes. The behaviour that was predominantly felt to be an attitude problem was speed, and is also an attitude which could cause unsafe driving and should therefore be focused upon. For example, an individual who has a positive attitude towards speed may drive too fast for the prevailing road conditions or 'his' skill level, thus driving unsafely, and possibly having an accident.

4.11.2 Observation of Police Response Driver Training

The response training given by the Essex Police was observed between December 1990 and April 1991. From these observations, it was discovered that drivers may be encouraged to drive at speeds that were unsafe for the road conditions, perhaps omitting the forward planning and the margins of safety stated in the training manual (Roadcraft, 1977). It seemed that the speed instruction given in initial training may be ignored, being replaced with high speed high risk driving. The trainees seemed to enjoy this element of the training, finding it exciting and thrilling.

Observation of the response training also showed that trainees may inadvertently be taught to adopt aggressive attitudes towards driving. Although difficult to define, this was closely linked to speed and involved close following of the car that was being chased, irrespective of whether car control was maintained. A pursuing vehicle seemed to harass the driver of the vehicle it was pursuing who would be aware that 'he' is being closely followed, and in a real life situation would probably drive faster if 'he' did not want to be caught by the driver. This may be the cause of many pursuit accidents.

In addition, it was discovered from observing police driving under normal driving conditions that the "progressive" driving taught may in-fact be aggressive in the attitude it develops towards other road users. A good example of this was the overtaking technique whereby to obtain maximum vision of the road ahead, the driver would position 'his' vehicle in the offside lane before overtaking. This could harass the driver ahead and may cause 'him' to experience anxiety and stress, which could possibly lead to an accident.

Although it is felt that these attitudes as inappropriate with regards to safe driving, the Police felt that there was nothing wrong with what was being taught and regarded such driving as good driving.

4.11.3 Focus of Research

From the primary research, it has been decided to focus upon attitudes towards speed, and attitudes towards using speed to experience thrill and excitement when driving. As it is stated in the objectives of the response phase of the training course that it aims to produce a calm and controlled driving style (see appendix 1), it seems very important that this phase of the course, and the course in general develops appropriate attitudes towards speed, thrill, and excitement when driving. The decision to concentrate research on these particular attitudes towards driving is also reinforced by previous research conducted on the general public, and on the police force. Wasielewski (1984), in observing and recording the speed of cars on a two lane road, found that drivers with a history of accidents and convictions drive at higher speeds. Fenton (1991, p6) claims that the results of a gallop poll show that one in six drivers have driven faster than 100mph in the past year, which increases to 1 in 3 for drivers under 24. The Department of Transport (1991) on conducting a survey of motorways discovered that the average speed of private cars was 75mph, with 72% of cars exceeding the speed limit of 70mph. Stradling et al (1992), in a survey of drivers discovered that disregarding speed limits was reported by drivers as being their most aberrant driving behaviour. Smith and Gray (1985, p338-341) have found that police officers in general and car crews in particular spend a large amount of their time searching for excitement and sensation. It therefore seems essential to discover whether police driver training develops appropriate attitudes towards this aspect of driving.

In addition, if driver training is to be effective, trainees will have to have a positive attitude towards what is being taught, as otherwise there will be a reluctance to change behaviour. It is therefore envisaged that an analysis of attitudes towards what is currently being taught on the course be undertaken.

4.11.4 Measurement Procedure

The direct and semi-direct attitude measurement was undertaken by asking trainees to fill in a confidential questionnaire at the beginning of training (see appendix 3), after the four week standard phase (see appendix 4), and after the extra two week response phase (see appendix 5) of the driver training course. Trainees who undertook the course between June and December 1991 were used for the research. The total number of trainees used was 76, with 43 trainees only undertaking the standard phase, and 33 trainees undertaking both phases of the training. Trainees were asked to give their name on the questionnaire so that comparisons could be made between the trainees' responses at different stages of the training. Measurement of trainees' attitudes was also undertaken by driving instructors who also filled in a questionnaire after the standard phase and after the response phase of training (see appendix 6).

The direct attitude measurement has been obtained by measuring trainees' agreement or disagreement to statements on scales ranging from 1-7 before and after training with regards to:

1) What is being taught (Roadcraft).

2) The thrill and excitement obtained from driving with flashing blue lights and at high speed.

3) What is being taught on the off-road training element (given at Boreham) of the extra two week response phase (only asked to those who undertook the response phase).

4) The thrill and excitement achieved from the off-road training element of the extra two week response phase (only asked to those who undertook the response phase).

These attitude statements have been contained in a list of more general attitude statements so as not to make the respondents sensitized to the driving related questions, as this may lead to inaccurate answers.

Driving instructors were also asked to rate the attitude of trainees after the standard and response phase to discover whether there were any significant differences between this assessment, and the assessment obtained from questioning the trainees themselves.

The semi-direct attitude measurement has been obtained by asking the following 'open ended' questions on the questionnaires:

1) **Reasons for Joining the Police Force**

Trainees were asked this question at the beginning of the training to discover whether the police force recruit thrill and excitement seeking individuals. If this is the case, then it could be inferred that such individuals might develop unsafe attitudes towards road safety.

2) Aspirations to Join the Traffic Division

Trainees were asked if they aspired to join the Traffic Division, and if so, why did they have these aspirations. From the answers given it is possible to discover if respondents who aspire to join the traffic division have inappropriate attitudes about the job, or attitudes which vary from trainees interested in other areas of police work. For example, they may want to join the Traffic Division merely to experience thrill and excitement from driving at high speeds. In addition, it is possible to compare the attitudes of those who wanted to join the traffic division with those who wanted to specialise in other areas of police work, in order to establish whether the traffic division was attracting police officers who differed in their attitudes towards driving. Trainees were asked this question before and after driver training as it is felt that training may change an individual's aspirations.

3) Trainee Rating of the Course

This was asked to indirectly measure attitudes towards what was being taught on the course, and how it was being taught. Trainees were asked to rate the course after four and six weeks on a seven point scale ranging from very good to very bad to establish whether the rating of the course varied for the standard phase and the response phase.

4) Good and Bad Points of the Training Course

Trainees were asked to state the good and bad points of the training course, to infer from such statements whether any inappropriate attitudes towards the course had been developed that could lead to trainees driving unsafely. For example, if the majority of good points stated by trainees referred to the excitement and thrill obtained from the speed elements of the training, then it could be inferred that speed may be over-emphasised, and that this could cause inappropriate attitudes to develop. In addition, this question was included to highlight any aspects of the course that could be improved. This has been undertaken after the standard phase and after the response phase to enable comparisons to be made between the two different types of training.

4.11.5 Method of Interpreting the Results

The analysis for the direct attitude measurement was based on comparing the percentage of trainees rating the attitude statement scales 1-7 at each stage of training. The degree of change in the rating of attitude statements since the beginning of training was also evaluated by subtracting trainees scores on the attitude scales at the end of training from scores at the beginning of training. In addition, a comparison was made at each stage of the training between trainees who only undertook the standard phase of training, and trainees who undertook the standard and response phase of training. This comparison analysed the differences between mean scores using a T test to determine whether differences were significant. Differences were assumed to be significant if there was at least a one in one hundred possibility that the differences were due to chance ($p < 0.05$).

Each response from the 'open ended' questions used in the semi-direct attitude measurement were written on cards. An independent researcher then grouped responses for each question into similar responses. This was to avoid any subjective bias that may occur in grouping responses. The results were then interpreted by calculating the percentage of respondents stating each grouped response. As with the attitude statements used for the direct attitude measurement, the rating of scales used were interpreted by comparing the percentage of trainees rating the scales one-seven at each stage of training. In addition, the direct attitude statements (used in the direct

attitude measurement) of trainees who made certain 'open ended' responses (those referring to speed, thrill, excitement, and road safety) were analysed. This was to determine whether there was a link between such responses, and the direct attitude statements.

4.12 Indirect Technique of Attitude Measurement (Using the Modified Theory of Reasoned Action)

It has been decided to apply the modified theory (see chapter 3, section 3.56) using an indirect measurement technique. Such a technique may be more successful than direct techniques in measuring components of the theory and attitudes towards driving in general because:

1) An individual who is perfectly aware of 'his' attitudes and beliefs can be unwilling to express them, or may give untrue statements despite apparent cooperation. This may be caused by factors such as group norms, social pressures, wanting to keep our attitudes private, the need not to appear ignorant, to preserve self-esteem, and difficulty in admitting that we do not meet the norms and expectations set for us by society. This could particularly affect the recording of driving attitudes because driving ability often involves status and prestige. Drivers may not admit to possessing attitudes and beliefs that are not associated with road safety or are related to poor driving performance.

2) To accurately predict behaviour, the Theory of Reasoned Action requires that attitudes and beliefs are measured with regards to specific forms of behaviour in specific situations. Whilst such behaviours have been presented on a questionnaire using pictures and a description of driving behaviours (Reason et al, 1991), this may to some respondents be difficult to understand and visualise, as it does not accurately portray the behaviour within the context in which it was undertaken.

To overcome these problems it was envisaged that it may be necessary to measure attitudes and beliefs using some form of projective technique of data collection.

4.12.1 Projective Techniques

Projective Techniques are designed to penetrate below the level of conscious awareness or behind the individual's social facade to discover underlying attitudes, motives and beliefs. They are based on the theory that when an individual is presented with vague or ambiguous stimuli (that could be interpreted in a number of different ways) and asked to interpret them in a situation where the researcher's intentions are un-clear, interpretation can only be based on an individual's own attitudes, values, and personality (Kassarjian, 1974, p86). Attitudes and values are therefore used to interpret the meaning of such ambiguous stimuli. Kassarjian gives the example of a study of a football match where it was found that the fans of opposing teams, whilst watching the same game interpreted the game in such a way that it seemed that two different games had been observed. Such interpretations by an individual are thus indicative of the underlying attitudes and personality of that individual.

Projective techniques have predominantly been used in clinical psychology, although have also been used in marketing. Examples of projective techniques frequently used are sentence completion, cartoons, picture interpretations, and the writing of stories (Kassarjian, 1974, p89-95, Oppenheim, 1984, p167-192).

Shaw (1965) in a longitudinal study of bus drivers in South Africa used two projective tests to predict drivers accident liability. These were:

1) A "Thematic Apperception Test" whereby subjects had to write stories about a series of pictures. From the stories it is theorised that an analysis of the personality of the individual can be made, just as you can get a feeling of what an author is like by reading several of 'his' books.

2) "The Social Relations Test," whereby a somewhat ambiguous situation is built up in comic strip form and the subject is required to finish the story by writing a paragraph of about ten lines. It is theorised that the personality can be analysed from these stories as a subject cannot continue the action without revealing his own apperception of the situation and its outcome.

By using these tests, Shaw was able to show their value for predicting accident liability.

Although Shaw's work has frequently been criticised (see chapter 2, section 2.24), this was due to the personality profiles that were constructed, rather than the technique itself, and such techniques are still frequently used.

4.12.2 Using Projective Techniques to Measure Driving Attitudes Using the Theory of Reasoned Action

Shaw's work involved classifying individuals into general personality profiles, each of which were related to a certain accident liability. Attitude measurement towards specific driving situations was attempted using pictures, but failed to record underlying attitudes, and only produced statements of the virtues of safe driving. In addition, the interpretation of the results was undertaken by trained researchers who developed the skills required for such interpretation over several years. Due to these problems it is not possible to use the same technique as Shaw to analyse driver behaviour using the Theory of Reasoned Action.

However, the need to present ambiguous stimuli and specific forms of driving behaviour can possibly be undertaken by presenting respondents with short videos of several specific driving behaviours. The aim of using videos is to produce driving situations where a combination of correct and incorrect attitudes in terms of road safety are being displayed by the driver, along with some featureless aspects of driving. As the video represents driving situations commonly experienced by drivers, such attitudes will not be blatantly obvious to someone watching the video. It is thus envisaged that if the respondents are asked to list the good and bad points shown in the video, only those who possess correct attitudes towards road safety will be able to spot them. In addition, individuals possessing inappropriate attitudes towards road safety may also classify good points as bad points and vice versa.

The good and the bad points listed by an individual could be assumed to comprise an individual's beliefs regarding the behaviours shown. These belief statements may be far more representative of actual beliefs than recording beliefs using a standard questionnaire technique, as respondents would not be blatantly aware that such statements are related to their behaviour, thus reducing the risk of incorrect responses being given. The videos may also aid measurement of attitudes by acting as retrieval cues, providing information to help access beliefs and attitudes towards various driving manoeuvres from an individual's memory. This is because the videos may depict similar driving situations that have frequently been experienced by respondents. By showing such similar situations, any beliefs and attitudes that an individual

possesses regarding them will easily be remembered, as it has been shown that reinstating the environment of learning enhances recall (Baddeley, 1982, p105).

The use of short video sequences of several driving behaviours can therefore record an individual's beliefs regarding the behaviours shown. From these beliefs, inferences can be made regarding trainee's overall attitude towards driving. However, this technique cannot accurately predict behaviour by applying the modified version of the Theory of Reasoned Action because the components of the model (belief strength, and evaluation of belief, self efficacy, overall attitude) need to be measured regarding a specific behaviour, rather than a set of several specific behaviours (required to present ambiguous stimuli). Although the Theory of Reasoned Action cannot be strictly applied using this technique, the components of the model have been measured, as the results will verify the constraints that affect the use of the model. However, an overall measure of self efficacy was not obtained to apply this element of the model, as it was felt that having several different behaviours in each video sequence would make such a measure difficult to analyse. Instead, trainees were asked which of the good and bad points they felt were shown in the video sequences represented the way they would drive in a similar situation. Although these responses could not be used to provide a measure of self efficacy to apply this element of the model (as the good and bad points were merely stated, rather than measuring the degree to which such points would be undertaken in a similar situation), they were useful as an assessment of driving skill, and used for this element of the research (see section 4.2). The research therefore applied the Theory of Reasoned Action using the belief strength, and evaluation of belief, and overall attitude components of the model.

4.12.3 Choice of Video Technique to be Used

From analysing research into techniques for studying unsafe driving actions (Charlesworth and Cairney, 1988), it has been decided that in-car videos should be used to make the projective videos of driving behaviour. This is because such a technique enables detailed aspects of driver behaviour to be observed which could not be observed from a video taken from outside the vehicle. As police driver training involves the understanding of certain complex procedures such as steering, gear changing, observation and anticipation, such detail is required to analyse the effectiveness of police driver training on attitudes.

Although the driver is aware that 'his' behaviour is being studied using in-car videos, and may thus drive the way 'he' perceives the researcher expects, it is felt that if attitudes are a major cause of accidents, they will eventually display themselves in driving, irrespective of the driver being aware that 'he' is being studied. This problem can also be overcome if the researcher's intentions are not made clear to the drivers who are being videoed. In addition, Charlesworth and Cairney point out that errors characteristic of particular sites or particular individuals occur frequently enough for in-car observation techniques to successfully be used. It is envisaged that attitudes are the cause of some of these errors and will therefore be recorded using an in-car video technique. In-car videos also have the advantage of displaying specific forms of behaviour in specific situations which is required to accurately predict behaviour using the Theory of Reasoned Action (Ajzen and Fishbein, 1980).

4.12.4 The Making of Projective Videos of Driving Behaviour

Eight drivers who had all passed the Department of Transport standard driving test were videoed from the rear seat of their cars on a standard 30 minute route. Each driver was asked to drive the way they normally would, in order that the merits of using the videos for training purposes could be established. By giving this information

to drivers, it was envisaged that they would not feel that their driving was actually being assessed, and would therefore drive with reference to their attitudes and beliefs, rather than the way they perceived the researcher expected them to drive. In addition, as none of these drivers had passed an advanced test, they may not drive correctly in terms of what is taught on the Standard/Response police driver training course given by the Essex Police (Roadcraft, 1977). Trainees who have appropriate beliefs regarding the content of the training course should therefore notice this, and state it in their beliefs regarding these videos.

In addition to the eight drivers who had passed the Department of Transport standard driving test, it was felt that videos of police driving techniques should also be made, to establish whether trainees possessed appropriate beliefs with regards to what was being taught (Roadcraft, 1977). A video was made of an advanced driving instructor from the Kent Police Driving School who was instructed to drive the way he normally did. No specific route was chosen, as the area driven was not known to the researcher. Approximately one hour of driving was videoed. Another video of driver trainees undertaking on road pursuit training given on the response phase of the Standard/Response course by the Essex police was also undertaken, to establish whether trainees possessed the correct beliefs with regards to the extra two week response course. Approximately two hours of pursuit driving was videoed.

In making the videos, every attempt was made to record as many aspects of the driver's behaviour as possible. Videos were made from the rear seats of the driver's car being videoed, with the passenger seat reclined, to enable maximum view of vehicle instruments and the driver's actions to be obtained. The video recorder was equipped with a zoom lens which was adjusted to provide a view of the inside of the car, yet at the same time providing a view of what was happening on the road ahead. A microphone was secured under the bonnet of each car to record the sound of the engine as it was found that the sound recorded from a microphone inside the car did not give an accurate recording of the sound heard when actually driving. In addition, by having a microphone secured under the bonnet, gear changes could be heard, and it was possible to determine whether correct use of gears in terms of engine revs had been undertaken. The microphone under the bonnet was used for all the videos of driver behaviour except the video of pursuit training. This was because for this particular driving behaviour, the radio commentary of the co-driver needed to be included to ensure that the context of the driving behaviour was the same as would be experienced if drivers were in a similar situation.

When the videos were being recorded by the researcher, speaking to the driver was only undertaken if it was initiated by the driver as it was felt that this may interfere with the driver's normal behaviour.

To edit the video, it was decided to send the videos to 'experts' on driving, to provide an overall opinion of each video. The head of the Essex Police Driving school was sent the videos (Chief Inspector John Johnson), along with the former head of the Kent Police Driving School (Superintendent Peter Amey). From the opinions of the 'experts', the videos were edited. Five eight minute driving sequences were made, each containing good and bad examples of driving in terms of road safety in relation to the police driving technique (Roadcraft, 1977). Three of the sequences were of the drivers who had only passed the Department of Transport standard driving test, and two were of police drivers who had been taught police driving techniques (one of standard police driving, and one of pursuit driving). Each video showed a wide range of different urban and rural driving situations. The videos were edited to display safe and unsafe performance of basic motor skills (for example, steering technique, use of gears) and also of more complex driving manoeuvres (for example, overtaking). In

addition, due to the focus of the direct and semi-direct attitude measurement on attitudes towards speed, thrill, and excitement (see section 4.113), an attempt was made to display such attitudes in some of the behaviours shown in the video sequences. The videos were edited (using two video recorders) in such a way that the driving behaviours of interest to the researcher were mixed up with element of featureless driving. By doing this and by cutting each video sequence to approximately eight minutes, it was hoped not to sensitize trainees to elements of the video, while at the same time maintaining interest throughout the video.

4.12.5 Administering the Video and Questionnaire

As with the direct and semi-direct attitude measurement, trainees who undertook the driver training course between June and December 1991 were used for the research (see section 4.12). Video sequences one-four were shown to trainees after the four week standard phase of training, and video five was shown to trainees after the extra two week response phase of training. Instructions were given on the video of how to fill in the questionnaire that accompanied the video. In addition the researcher gave instructions of how to fill in the questionnaire before the video was shown.

The questionnaire (see appendix 7) was constructed to record individual beliefs with regards to each video sequence, belief strength and evaluation of belief, overall attitude, and a measure of self efficacy towards the driving in the video.

4.12.6 Method of Interpreting the Results

The results obtained from trainees for each video sequence have been evaluated by comparing them to the results obtained from showing the video sequences to the driving instructors who taught the trainees. In addition, the results from trainees were also compared to individuals considered 'experts' of the driving task and road safety. A variety of different organisations and people concerned with promoting road safety and/or advanced training have been used to provide the 'expert' opinion of the video sequences. This will allow an overall comparison between trainees, police driving instructors, and 'experts'. The following is a list of people/organisations who have therefore been used to give 'expert' interpretations of the videos, with a description of their experience regarding the driving task, road safety, and knowledge of advanced driver training:

1) **The Royal Society for the Prevention of Accidents (ROSPA)**

   ROSPA is Europe's largest safety organisation, and is involved in all aspects of accident prevention and safety training. It provides advanced driver training courses and also approved driving instructor courses.

2) **The British Institute of Traffic Education Research (BITER)**

   BITER provides a wide range of traffic education material, mainly for schools. They offer training courses in road safety for organisations in Great Britain and overseas, and also undertake research into road safety issues.

3) **Approved Driving Instructors National Joint Council**

   This organisation provides further training for approved driving instructors in standard and advanced driving tuition.

4) **Superintendent Peter Amey**

Peter Amey is the former head of driver training for the Kent Police. He has maintained an interest in police driver training, having written articles on improving the current training (Amey, 1989a, 1989b, 1989c) and also hopes to publish a book on police driver training.

5) **Sir John Whitmore**

Sir John Whitmore is a former international racing and rally driver, who is currently a sports psychologist, with experience in mental training and skill development. He has written a book which aims to make people better drivers (Whitmore, 1988) and also presented the Working Party of the Association of Chief Police Officers with a report on the police driving manual (Roadcraft, 1977) stating areas where improvements could be made (Whitmore, 1989).

6) **The Guild of Experienced Motorists**

The Guild of Experienced Motorists one of Britains largest road safety organisation. It promotes road safety through road safety campaigns with its philosophy being to promote care, courtesy, and concentration when driving to reduce accidents.

7) **Drive and Survive**

This is a commercial driver training organisation, providing advanced driver training courses for a number of organisations for a variety of different vehicles; for example Dupont.

8) **The Driving Business**

This is a commercial driver training organisation, providing advanced car driver training courses for a number of organisations; for example Phillips.

9) **Paul Ripley**

Paul Ripley conducts high performance training and defensive car driving courses for employees from a number of organisations; for example Lotus, BMW, West Yorkshire Police.

10) **Mike Franey**

Mike Franey is a former racing driver who conducts high performance car driving tuition, focusing on improving the safety of drivers by increasing their level of anticipation.

11) **Rolls-Royce (Peter Perris)**

Peter Perris has been responsible over the past ten years for the content and delivery of the Rolls-Royce chauffeurs driving course.

12) **James Brown**

James Brown assisted in the preparation of a report on police driver training (Whitmore, 1989). He is also involved with driver training at BMW and Rolls-Royce

The good and bad points listed by respondents for each video sequence were grouped into positive and negative beliefs. As with the semi-direct attitude measurement (see section 4.115) these beliefs were then written on cards and then grouped by an independent researcher into beliefs of similar meanings. The results were then interpreted by calculating the percentage of respondents stating each grouped belief. The good and bad points respondents would and would not undertake in a similar situation were also grouped and evaluated in a similar manner and were used for the assessment of driving skill (see section 4.2). The modified theory of reasoned action was applied by multiplying the belief strength and the evaluation of the belief (b_i a_i) for each respondent, obtaining the total value for all respondents (Σ b_i a_i), and then correlating this value with the sum of respondents overall attitude (A_{act}) towards the video sequence (for complete formulae of modified model, see chapter 3, section 3.56).

4.2 Driving Skill Assessment

An assessment of driving skill is important as many unsafe driving manoeuvres may be due to lack of skills, rather than poor attitudes. Accidents could be caused by inadequate skills whereby people may have a positive attitude towards safety, but their beliefs held about what is safe are incorrect due to an inadequate level of skill.

Because the skills taught are numerous and complex to assess, it has been decided that the best way to directly assess driver skills is to obtain an assessment of trainees from police driving instructors, as they have been trained to undertake such assessments. Driving instructors were therefore asked to fill in a questionnaire (see appendix 6) whereby they assess trainees driving skills on a good/bad scale, give the course mark that the trainee received, and state whether the trainee is likely to experience any future driving problems and what these problems could be.

In addition, trainees were asked which of the good and bad points that they felt were shown in the video sequences (used for the indirect measurement of trainee attitudes) represented the way they would drive in a similar situation (see appendix 7). This was asked to establish whether trainees perceived themselves as having the ability to undertake, or not to undertake particular driving manoeuvres, as this is important in determining whether trainees will use the skills taught (see chapter 3, section 3.55). This question was also used as a measure of self efficacy for the indirect assessment of trainees attitudes (see section 4.125).

The driving skills of the trainees was undertaken after the first four weeks and after the extra two weeks of training.

4.21 Method of Interpreting the Results

The analysis for the skill assessment was based on comparing the percentage of instructors rating the skill assessment scales one-seven at each stage of training. In addition, a comparison was made at each stage of the training between the skill assessment of trainees who only undertook the standard phase of training, and trainees who undertook the standard and response phase of training. As with the direct attitude

measurement (see section 4.115), this comparison analysed the differences between mean scores using a T test to determine whether differences were significant.

As with the semi-direct attitude measurement (see section 4.115), the future driving problems listed by instructors were written on cards and then grouped by an independent researcher into problems with similar meanings. The results were then interpreted by calculating the percentage of instructors stating each future driving problem. The good and bad points trainees would and would not undertake in a similar situation, which were obtained from watching the video sequences (see section 4.126) were also grouped by an independent researcher. The percentage of good and bad points trainees would and would not undertake was then calculated, grouping results into four percentage categories. In addition, a list of the good points trainees would not undertake, and the bad points they would undertake were analysed by calculating the percentage of trainees stating such responses.

4.3 Measurement of the Stability and Longevity of Driver Trainees' Attitudes and Driving Skills

As it is difficult to assess the longevity of driver skills due to the given timescale of the research, and also the limited funds available, the longevity of the effects of driver training was only assessed using trainees attitudes.

A confidential questionnaire (see appendix 8) was sent to trainees with a prepaid envelope at various time intervals, ranging from 3-10 months after their Standard/Response driver training course. By varying the time interval that the questionnaires were completed, it was hoped to discover the effect time had on attitudes. Trainees were not asked to give their name (to match the responses with those obtained when trainees were undertaking the course) as sending questionnaires to trainees enabled a careful coding to be undertaken, so that trainees could be identified without the need of asking their name. As the coding was carefully concealed, trainees would have assumed that the questionnaires were anonymous. It was hoped that this would obtain more honest answers from trainees, and also increase the response rate. The questionnaire undertook an analysis of the following 'open ended' and direct questions:

1) The Elements of the Course Trainees Still Used

Trainees were asked which elements of the training they still used, and if this varied during work, or during leisure time. This was asked to establish whether the longevity of attitudes towards what is being taught varied for different elements of the training, and for different types of driving.

2) The Elements of the Course Trainees Enjoyed or Disliked

Trainees were asked what elements of the course they enjoyed and what elements they disliked. As with the good and bad points question on the initial direct and semi-direct questionnaires, such statements allowed inferences to be made as to whether any inappropriate attitudes towards the course had been developed that could lead to trainees driving unsafely. In addition, this question was included to highlight any aspects of the course that could be improved.

3) Attitudes Towards What was Taught, Speed, and Thrill

As with the initial direct and semi-direct attitude questionnaires, trainees were asked to indicate their agreement or disagreement with a series of statements regarding what

was taught on the course, and towards speed and thrill. Some of the statements differed from previous questionnaires in an attempt to increase the response rate, as no direct contact with trainees was made, and it was felt that if trainees had answered similarly worded questions to those previously completed, they would not see the point of the exercise and refuse to fill it in.

4.31 Method of Interpreting the Results

The elements of the course trainees still applied during police duty and leisure time were analysed by calculating the percentage of traineés who applied and who did not apply each element of the training. A comparison was made between trainees who only undertook the standard phase, and trainees who undertook the standard and response phase of training, and also trainees completing the questionnaire 3-6 months, and 7-10 months after training. The significance of any notable differences in responses were statistically tested using Chi Square (with Yates Correction). Differences were assumed to be significant if there was at least a one in one hundred possibility that the differences were due to chance ($p < 0.05$).

The direct attitude statements that were used were analysed in the same manner as the direct attitude measurement (see section 4.115), comparing percentage ratings of scales, the difference in mean scores, and the degree of change in attitudes. The analysis compared trainees undertaking the standard phase only, and trainees undertaking the standard and response phase of training, and also compared trainees' responses at different time periods after training (3-6 months, and 7-10 months). In addition, the attitude statements that were reworded for this element of the research (see section 4.3) were correlated with those used in the direct attitude measurement, to discover whether they were being interpreted in a similar manner.

The 'open ended' questions that were used were analysed in the same manner as the semi-direct attitude measurement (see section 4.115), with an independent researcher grouping responses into answers of similar meaning, with the percentage of trainees stating each response then calculated for trainees undertaking the standard phase only, and trainees undertaking the standard and response phase of training.

4.4 Driver Instructor Research

From observing the pursuit training at Essex, and talking to some of the trainees, it seems that the driving instructors could have a major effect on attitude development, acting as role models for the trainees. It is therefore important to discover the importance of instructors' behaviour in developing trainees' attitudes. In addition, if instructors have a major effect on attitude development, then it is important to discover whether the instructors' behaviour emphasised appropriate attitudes towards driving in terms of road safety. The following research has therefore been undertaken:

1) Trainees were asked if they aspired to drive in a manner similar to instructors, and to give their reasons why they did, or did not have such aspirations.

2) Instructors were asked if trainees aspired to drive in a manner similar to instructors, and give their reasons why trainees did or did not have such aspirations.

3) Instructors were asked what the Standard/Response driver training programme was trying to achieve, and then later asked to rate the importance of five main elements of the training programme for the course. This aimed to discover whether instructors placed equal emphasis on each element of the training, and

also to highlight any differences in instructors' responses when asked openly and when directly asked about specific elements of the course.

4) As with driver trainees, instructors' attitudes towards what is being taught and towards the thrill and excitement obtained from driving with flashing blue lights and at high speed were measured by obtaining trainees' agreement or disagreement to statements contained in a list of more general attitude statements. However, one scale that was used for trainees was omitted ("Driving in an emergency will be exciting compared to normal police driving") as it was felt to be ambiguous when directed at instructors. In addition, some of the statements used were also slightly reworded to relate to driving instructors, rather than trainees. As the changes made were only minor, a comparison can still be made with the answers given by driver trainees.

The questions directed at instructors were obtained by asking driving instructors who taught at the Essex Police Driving School (a total of 30 instructors) to complete a confidential questionnaire (see appendix 9) which they returned in a prepaid envelope. Although a larger sample of driving instructors could have been obtained by sending questionnaires to driving instructors from other police forces, this was not undertaken because of the unique nature of the Standard/Response course given at Essex. No other police force in Britain offers precisely the same training given in the extra two week response phase. This therefore made it impossible to use police driving instructors from other police forces, as comparisons in responses could not be made due to the different aims and objectives of the training given.

The questions directed at trainees were asked on the driver training questionnaire before and after the standard training course (see appendix 3 and 4), to discover the effect training has on aspirations to drive like instructors.

4.41 Method of Interpreting the Results

The 'open ended' questions that were used were analysed in the same manner as the semi-direct attitude measurement (see section 4.115), with an independent researcher grouping responses into answers of similar meaning, with the percentage of instructors stating each response then calculated.

The importance of the five main elements of the training programme for the course was based on instructors rating each element on a 1-7 scale, and then comparing the percentage of instructors rating each element 1-7 at each stage of training.

As with the direct attitude measurement (see section 4.115), the analysis for the assessment of instructors attitudes was based on comparing the percentage of instructors rating the attitude statement scales 1-7. A comparison was also made between instructors scores, and trainees scores (at the beginning and end of training) for trainees who only undertook the standard phase of training, and trainees who undertook the standard and response phase of training. As with the direct attitude measurement (see section 4.115), this comparison analysed the differences between mean scores using a T test to determine whether differences were significant.

4.5 Recruitment Policy Research

Inappropriate attitudes towards driving may be developed by trainees long before they undertake a course of police driver training. If recruitment policy tends to recruit police trainees who possess such attitudes, then this may make the task of police

driver training that much more difficult. To assess the extent to which this may be a problem, the following was undertaken:

1) An analysis was made of the recruitment literature available to individuals interested in joining the police force to discover if any attitudes that may cause unsafe driving behaviour were emphasised.

2) A questionnaire (see appendix 10) was sent to all recruitment officers for police forces in England, Wales, and Scotland to be returned in a prepaid envelope asking 'open ended' questions to discover:

i) If the recruitment officers' ideal candidate for recruitment into the police force in general and for the Traffic Division possessed attitudes that may cause unsafe driving behaviour.

ii) Did the recruitment literature available to candidates emphasise that these were the qualities required.

iii) Whether the enjoyment of exciting situations was something that would enhance recruitment into the police force in general, and into the Traffic Division, and why or why not this was the case.

4.51 Method of Interpreting the Results

The analysis of recruitment literature focused upon discovering whether speed, thrill, and excitement were emphasised in general, or in relation to the work of the Traffic Division.

The 'open ended' questions that were used were analysed in the same manner as the semi-direct attitude measurement (see section 4.115), with an independent researcher grouping responses into answers of similar meaning, with the percentage of recruitment officers stating each response then calculated.

4.6 Piloting the Questionnaires used in the Research

The interpretation by respondents of questions on the questionnaires used in the research could have been quite different to what was intended when the questions were constructed. It was therefore decided to undertake a pilot survey wherever possible. It was hoped that this would display any ambiguous questions, and ensure the relevance of the questions to future respondents.

The direct and semi-direct attitude measurement questionnaires (see appendix 3, 4, and 5) were piloted on 18 trainees undertaking the Standard/Response course of the Essex Police. As many of the questions specifically related to this particular course, the piloting had to use trainees undertaking the course. One minor error was discovered in the information regarding which sections of the questionnaire to fill in. The questionnaire was slightly modified to overcome this problem. The problem was rectified during the pilot survey by verbal instruction. As no other problems were discovered, the results of the pilot survey could be used as part of the actual survey.

The indirect attitude measurement questionnaire (see appendix 7) was piloted on students and lecturers of the Applied Psychology Unit at Cranfield Institute of Technology. A total of nine respondents took part in the pilot survey. It was discovered that some respondents did not turn to the final page of the questionnaire to

complete the final section. The questionnaire was therefore modified, with instructions given to turn to the last section at the end of the previous section.

The questionnaire used by instructors to assess trainees attitudes and skill levels (see appendix 6) were piloted using six driving instructors of the Essex Police who used the questionnaires to evaluate the 18 trainees used in the pilot survey of the direct and semi-direct attitude measurement questionnaire. No problems were discovered, meaning the results of the pilot survey could be used as part of the actual survey.

The questionnaire used to analyse the longevity of drivers' attitudes (see appendix 8) was not piloted due to time constraints. In addition, it was not possible to find an appropriate sample of respondents to pilot the questionnaires sent to recruitment officers (see appendix 10) and driving instructors (see appendix 9) for the driving instructor research, as the questions would only be able to be answered by instructors on the Standard/Response course at Essex, and police recruitment officers. Extreme care was therefore taken in constructing these questionnaires, with the questionnaires being checked by several people, including a police officer of the Essex Police Driving School. This approach was also adopted for all the questionnaires used in addition to piloting.

4.7 Terminology Used in Interpreting Results

The analysis of results has adopted the use of certain terms to describe the research findings. As the interpretation of these terms may be ambiguous, the meaning that has been given to the terms will be briefly outlined:

1) Positive/Negative/Neutral

The term 'Positive' indicates a respondents favourability towards the attitude object or behaviour in question, in this case indicated by a score of 1-3 (where scales are used). The term 'Negative' reflects unfavourability on the part of respondents towards the attitude object or behaviour in question. This is indicated by scores of 5-7 (where scales are used) in this study. The term 'Neutral' is used to describe respondents who are neither favourably or unfavourably disposed towards the attitude object or behaviour in question. A score of 4 is attributed to this situation (where scales are used).

2) Appropriate/Inappropriate Attitude

An 'Appropriate'/'Inappropriate' attitude is deemed to be compatible with the objectives of the course in driver training given by the Essex Police (see appendix 1). As such, it refers to whether the statements elicited from attitude statements and open-ended questions are consistent with the development of a calm mental approach to driving. This will reduce the probability of drivers becoming over excited from the rush of adrenalin that can occur at high speeds, possibly leading to dangerous driving manoeuvres.

Clarification of the terminology can be seen by the example of the rating of "high speed driving is thrilling". If the statement is rated 1-3 on the scale, the respondent is deemed to possess a positive attitude towards experiencing a thrill from high speed driving, and it is concluded that this is inappropriate in terms of the course objectives.

4.8 Summary of Chapter 4

In this chapter the research methodology has been explained. In the next chapter, the results of the research will be outlined and discussed.

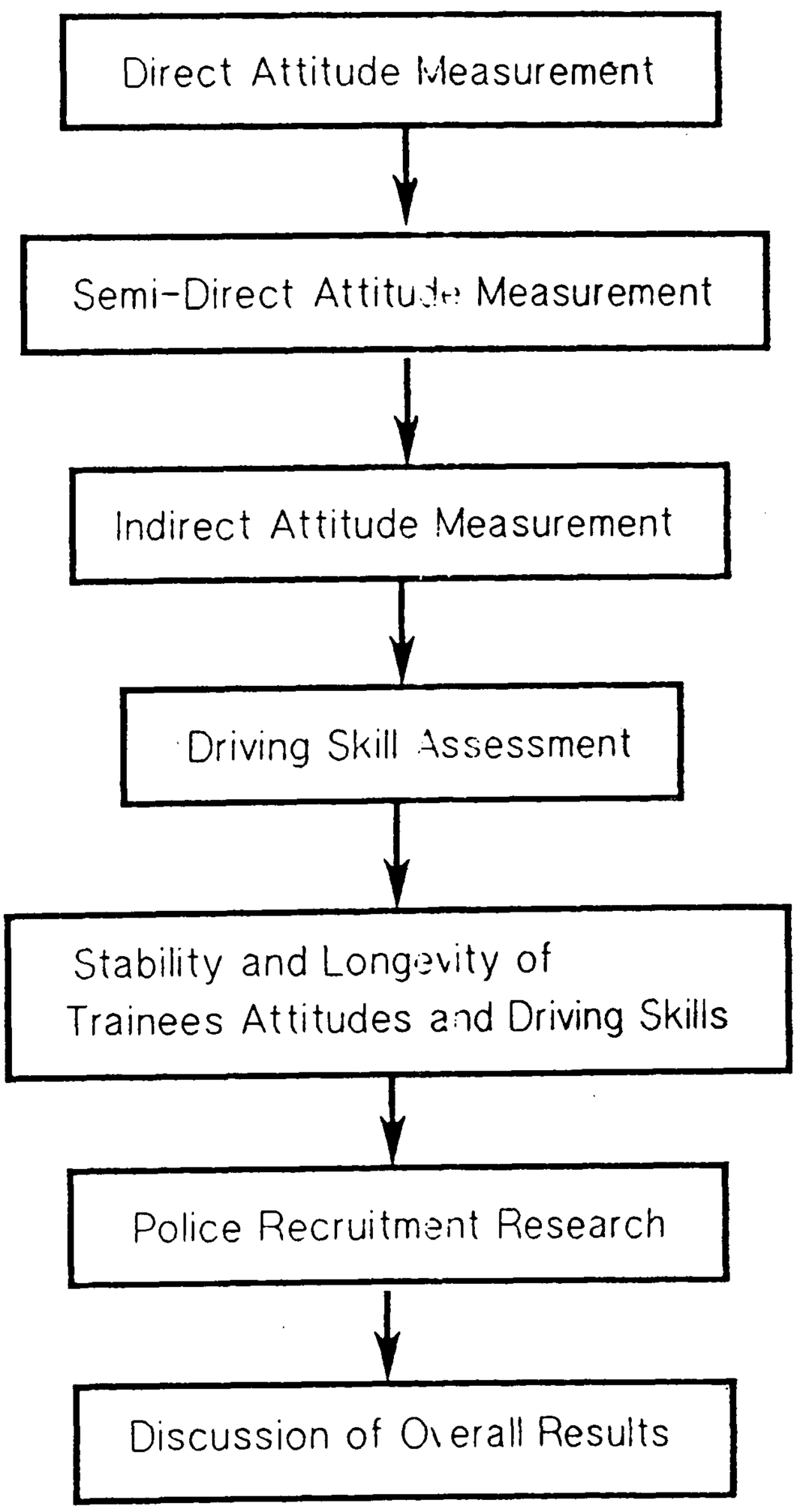
CHAPTER 5

RESULTS

5.0 INTRODUCTION

In this chapter, the main research results will be analysed and discussed. Figure 5.1 shows the sections that this chapter will be divided into. From figure 5.1, it can be seen that each element of the research (see chapter 4) will be evaluated in a separate section, with a section for an overall discussion of the results. Each section of the chapter will now be dealt with respectively.

Figure 5.1: Flow Diagram Showing the Structure of Chapter 5



5.1 DIRECT ATTITUDE MEASUREMENT

5.11 Introduction

The direct attitude measurement concentrated on measuring attitudes towards speed, thrill, excitement, and what is being taught on the course. This was obtained using direct questioning to measure trainees' agreement or disagreement to statements on scales ranging from 1-7 before and after training (see chapter 4, section 4.114).

5.12 Attitudes Towards Speed, Thrill, and Excitement

5.12.1 As a Reason for Joining the Police Force

From table 5.1, it can be seen that high speed driving and the thrill of driving fast was not a major reason for initially joining the police force. However, a minority did express positive attitudes towards high speed driving and the thrill of driving fast and the percentage of trainees possessing such attitudes varied at different stages of the course. After the four week standard phase of training, the number of trainees possessing positive attitudes had fallen from 15.5% to 8.6%. After the extra two week response phase of training, the number had increased to 21.2%. At all stages of the course, the strength of any positive attitudes that were expressed were weak (with the majority of individuals possessing positive attitudes scoring three on the seven point scale), whereas the strength of any negative attitudes that were expressed were strong (with the majority of individuals possessing negative attitudes scoring six or seven on the scale).

Table 5.1: The Rating of High Speed Driving/Thrill of Driving Fast as a Reason for Joining the Police Force

High Speed Driving/ Thrill of Driving Fast	Very Important 1 2 3 4 5 6 7 Unimportant						
	1	2	3	4	5	6	7
AT BEGINNING							
Frequency	1	1	9	16	12	14	18
Percent	1.4%	1.4%	12.7%	22.5%	16.9%	19.7%	25.4%
Cumulative Percent	1.4%	2.8%	15.5%	38.0%	54.9%	74.6%	100.0%
AFTER STANDARD PHASE							
Frequency		1	5	12	19	14	19
Percent		1.4%	7.1%	17.1%	27.1%	20.0%	27.1%
Cumulative Percent		1.4	8.6%	25.7%	52.9%	72.9%	100.0%
AFTER RESPONSE PHASE							
Frequency	1	2	4	4	7	12	3
Percent	3.0%	6.1%	12.1%	12.1%	21.2%	36.4%	9.1%
Cumulative Percent	3.0%	9.1%	21.2%	33.3%	54.5%	90.9%	100.0%

From analysing the mean scores in table 5.2, it can be seen that the trainees who only undertook the four week standard phase of training generally possessed higher mean scores on the attitude scales than those who stayed for the extra two week response phase. The differences in mean scores were not significant at the beginning of training ($p > 0.05$) but became significant after the standard and after the response phase ($p < 0.05$); with mean scores increasing for trainees who only undertook the standard phase, and decreasing for trainees who undertook the standard and response phase of training.

Table 5.2: Comparison of the Differences in Mean Scores for the Rating of High Speed Driving/Thrill of Driving Fast as a Reason for Joining the Police Force

Comparison of Mean Scores (T Test)	BEGINNING OF TRAINING		AFTER 4 WEEKS		AFTER 6 WEEKS	
	S	R	S	R	S	R
Mean Score	5.05	5.22	5.67	5.03		4.88
Standard Deviation	1.57	1.48	1.31	1.28		1.31
T value	-0.48		2.04		* 2.34	
Degrees of Freedom	69		68		* 70	
2 Tail Probability	0.632		0.045		* 0.22	

Key: S = Standard Phase Only
R = Standard and Response Phase
* = Significance Calculated Using Standard Phase Only Scores After Four Weeks

Table 5.3 shows that the degree of change in attitudes before and after training is small, with the majority of trainees either not changing their attitudes, or only changing by one point on the scale. However, variations in the degree of change do occur with the length of training given. The majority of trainees who only undertook the four week standard phase of training (44.7%) did not change their attitudes before and after training, with a large minority (39.5%) changing towards a negative attitude towards speed and thrill, and only a small minority (15.8%) changing towards a positive attitude. The majority of trainees who undertook the standard phase and the extra two week response phase (48.2%) changed towards a more positive attitude towards speed and thrill, with a large minority (31%) not changing their attitudes, and a small minority (20.6%) changed towards a positive attitude towards speed and thrill.

Table 5.3: The Degree of Change Since the Beginning of Training in the Rating of High Speed Driving/Thrill of Driving Fast as a Reason for Joining the Police Force

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement						
	-3	-2	-1	0	1	2	3
STANDARD PHASE ONLY Frequency Percent		1 2.6%	5 13.2%	17 44.7%	8 21.1%	6 15.8%	1 17.2%
STANDARD AND RESPONSE PHASE Frequency Percent	1 3.4%	4 13.8%	9 31.0%	9 31.0%	3 10.3%	1 3.4%	2 6.9%

In summary, high speed driving and the thrill of driving fast is not a major reason for joining the police force. However driver training does seem to cause some trainees to re-evaluate their reasons for joining the police force. After training, high speed driving and the thrill of driving fast becomes less important for trainees who only undertook the standard phase, and more important for trainees who undertook the standard and response phase of training.

5.12.2 General Attitude Towards Speed, Thrill, and Excitement

From table 5.4, 5.5, and 5.6, it can be seen that at the beginning of training, the majority of trainees think that high speed driving is thrilling, and that driving in an emergency will be exciting compared to normal police driving; and a large minority think that driving with flashing blue lights will be exciting. The percentage of individuals possessing positive attitudes increased with the length of time trained. A significant change occurred after the extra two week response phase, where a large majority of trainees (60-72% of the sample) possessed positive attitudes towards all speed and thrill scales. At all stages of the course, the strength of positive and negative attitudes that were expressed were moderate (with the majority of individuals possessing positive attitudes scoring two or three on the seven point scale, and the majority of individuals possessing neutral or negative attitudes scoring four or five on the scale).

Table 5.4: The Rating of the Statement "Driving with Flashing Blue Lights Will be Exciting"

Driving With Flashing Blue Lights	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
BEGINNING							
Frequency	3	11	18	15	12	5	7
Percent	4.2%	15.5%	25.4%	21.1%	16.9%	7.0%	9.9%
Cumulative Percent	4.2%	19.7%	45.1%	66.2%	83.1%	90.1%	100.0%
AFTER STANDARD PHASE							
Frequency	2	9	20	18	6	9	5
Percent	2.9%	13.0%	29.0%	26.1%	8.7%	13.0%	7.2%
Cumulative Percent	2.9%	15.9%	44.9%	71.0%	79.7%	92.8%	100.0%
AFTER RESPONSE PHASE							
Frequency	1	10	10	8	3		1
Percent	3.0%	30.3%	30.3%	24.2%	9.1%		3.0%
Cumulative Percent	3.0%	33.3%	63.6%	87.9%	97.0%	97.0%	100.0%

Table 5.5: The Rating of the Statement "High Speed Driving is Thrilling"

High Speed Driving is Thrilling	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
BEGINNING							
Frequency	13	13	15	9	13	2	6
Percent	18.3%	18.3%	21.1%	12.7%	18.3%	2.8%	8.5%
Cumulative Percent	18.3%	36.6%	57.7%	70.4%	88.7%	91.5%	100.0%
AFTER STANDARD PHASE							
Frequency	5	15	22	9	5	7	6
Percent	7.2%	21.7%	31.9%	13.0%	7.2%	10.1%	8.7%
Cumulative Percent	7.2%	29.0%	60.9%	73.9%	81.2%	91.3%	100.0%
AFTER RESPONSE PHASE							
Frequency	1	6	15	9	1	1	
Percent	3.0%	18.2%	45.5%	27.3%	3.0%	3.0%	
Cumulative Percent	3.0%	21.2%	66.7%	93.9%	97.0%	100.0%	100.0%

Table 5.6: The Rating of the Statement "Driving in an Emergency will be Exciting Compared to Normal Police Driving

Driving in an Emergency will be Exciting	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
AT BEGINNING							
Frequency	9	24	16	8	4	8	2
Percent	12.7%	33.8%	22.5%	11.3%	5.6%	11.3%	2.8%
Cumulative Percent	12.7%	46.5%	69.0%	80.3%	85.9%	97.2%	100.0%
AFTER STANDARD PHASE							
Frequency	6	18	21	8	6	5	5
Percent	8.7%	26.1%	30.4%	11.6%	8.7%	7.2%	7.2%
Cumulative Percent	8.7%	34.8%	65.2%	76.8%	85.5%	92.8%	100.0%
AFTER RESPONSE PHASE							
Frequency	3	6	15	7		2	
Percent	9.1%	18.2%	45.5%	21.2%		6.1%	
Cumulative Percent	9.1%	27.3%	72.7%	93.9%	100.0%	100.0%	100.0%

From analysing the mean scores on table 5.7, 5.8, and 5.9, it can be seen that the trainees who only undertook the four week standard phase of training possessed higher mean scores on the attitude scales than those who stayed for the extra two week response phase. The differences in mean scores are not significant at the beginning of training ($p > 0.05$), but become significant on two of the three scales used ($p < 0.01$-0.05) after the standard, and after the response phase of training, with mean scores being slightly lower after the response phase. This is because the scores remained relatively stable, slightly increasing for those who only undertook the standard phase, but declined for those who undertook the standard and response phase of training. This shows that trainees who undertook the standard and response phase of training possessed more positive attitudes towards speed, thrill, and excitement than those who only undertook the standard phase (before and after training), with each phase of training increasing these differences.

Table 5.7: Comparison of the Difference in Mean Scores for the Rating of the statement "Driving With Flashing Blue Lights will be Exciting"

Comparison of Mean Scores (T Test)	BEGINNING OF TRAINING		AFTER 4 WEEKS		AFTER 6 WEEKS	
	S	R	S	R	S	R
Mean Score Standard Deviation	4.23 1.73	3.51 1.39	4.29 1.58	3.48 1.39		3.18 1.24
T value Degrees of Freedom 2 Tail Probability	1.86 69 0.67		2.23 67 0.029		* 3.26 * 69 * 0.002	

Key: S = Standard Phase Only
R = Standard and Response Phase
* = Significance Calculated Using Standard Phase Only Scores After Four weeks

Table 5.8: Comparison of the Difference in Mean Scores for the Rating of the Statement "High Speed Driving is Thrilling"

Comparison of Mean Scores (T Test)	BEGINNING OF TRAINING		AFTER 4 WEEKS		AFTER 6 WEEKS	
	S	R	S	R	S	R
Mean Score Standard Deviation	3.50 1.95	3.19 1.64	3.71 1.97	3.39 1.36		3.18 0.98
T value Degrees of Freedom 2 Tail Probability	0.70 69 0.484		0.78 67 0.441		* 1.40 * 69 * 0.167	

Key: S = Standard Phase Only
R = Standard and Response Phase
* = Significance Calculated Using Standard Phase Only Scores After Four Weeks

Table 5.9: Comparison of the Difference in Mean Scores for the Rating of the Statement "Driving in an Emergency will be Exciting Compared to Normal Police Driving"

Comparison of Mean Scores (T Test)	BEGINNING OF TRAINING		AFTER 4 WEEKS		AFTER 6 WEEKS	
	S	R	S	R	S	R
Mean Score	3.25	2.87	3.76	2.87		3.03
Standard Deviation	1.68	1.59	1.90	1.20		1.16
T value	0.97		2.27		* 1.93	
Degrees of Freedom	69		67		* 69	
2 Tail Probability	0.337		0.026		* 0.058	

Key: S = Standard Phase Only
R = Standard and Response Phase
* = Significance Calculated Using Standard Phase Only Scores After Four Weeks

Table 5.10, 5.11, and 5.12 show that in general, over the three scales used, the majority of trainees do not change their attitudes, or only change by one point on the scale. Although a large minority of trainees (20-40%) do change their attitudes, the changes towards positive attitudes are only slightly greater than the number of trainees changing towards a negative attitude, producing little overall change. There is very little variation in attitude change with length of training, with differences on one scale being counteracted by opposing differences or no differences in the other two scales.

Table 5.10: The Degree of Change Since the Beginning of Training in the Rating of the Statement "Driving with Flashing Blue Lights will be Exciting"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement						
	-3	-2	-1	0	1	2	4
STANDARD PHASE ONLY							
Frequency		4	8	16	6	3	1
Percent		10.8%	21.6%	43.2%	16.2%	8.1%	3.4%
STANDARD AND RESPONSE PHASE							
Frequency	2	3	4	13	6		1
Percent	6.9%	10.3%	13.8%	44.8%	20.7%		3.4%

Table 5.11: The Degree of Change Since the Beginning of Training in the Rating of the statement "High speed driving is Thrilling"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement						
	-3	-2	-1	0	1	2	3
STANDARD PHASE ONLY Frequency Percent		5 13.5%	3 8.1%	16 43.2%	10 27.0%	2 5.4%	1 2.7%
STANDARD AND RESPONSE PHASE Frequency Percent		2 6.9%	7 24.1%	10 34.5%	8 27.6%	1 3.4%	1 3.4%

Table 5.12: The Degree of Change Since the Beginning of Training in the Rating of the statement "Driving in an Emergency will be Exciting Compared to Normal Police Driving"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement							
	-3	-2	-1	0	1	2	3	6
STANDARD PHASE ONLY Frequency Percent		2 5.4%	8 21.6%	11 29.7%	12 32.4%	2 5.4%	1 2.7%	1 2.7%
STANDARD AND RESPONSE PHASE Frequency Percent	2 6.9%	2 6.9%	3 10.3%	7 24.1%	10 34.5%	4 13.8%	1 3.4%	1 3.4%

In summary, it can be seen that the majority of trainees possess positive attitudes towards speed, thrill, and excitement. Those who are selected for the extra two week response phase of training possess stronger positive attitudes than those who only undertook the standard phase. These differences slightly increase with each phase of training, with training enhancing positive attitudes towards speed, thrill, and excitement for trainees who undertook the standard and response phase. These are inappropriate attitudes to possess in terms of the objectives of the training course, as it is supposed to develop a calm attitude towards driving (see appendix 1). It therefore seems that police driver training is ineffective in developing appropriate attitudes, in changing inappropriate attitudes, and in selecting trainees with appropriate attitudes towards speed and thrill for response training.

5.12.3 Attitude Towards Boreham

From table 5.13, it can be seen that the majority of trainees who undertook the extra two week response phase strongly believed that the off-road training (given at Boreham) was exciting and considerably improved their driving ability. The number of trainees possessing positive attitudes is large, with 87-97% of the sample having positive attitudes towards the off-road training. The strength of the positive attitudes that were expressed were strong (with the majority of individuals possessing positive attitudes scoring one or two on the seven point scale), whereas the strength of any negative attitudes that were expressed were moderate (with the majority of individuals possessing negative attitudes scoring four or five on the scale).

Table 5.13 also shows that trainees believe to a greater degree that the training was exciting than they believe that it improves their driving ability. This difference in the way trainees rated each scale was also revealed by the fact that an insignificant correlation was found between the two scales ($r = 0.2518$, $p > 0.01$).

In summary, it can be seen that trainees have a strong positive attitude towards the training given at Boreham in terms of improving their driving ability and finding it exciting. Trainees rate this element of the training higher in terms of excitement than in terms of improving their driving ability.

Table 5.13: Boreham Attitude Scales

Boreham Attitude Scales	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
THE OFF ROAD TRAINING AT BOREHAM HAS CONSIDERABLY IMPROVED MY DRIVING ABILITY							
Frequency	9	18	2	1	2	1	
Percent	27.3%	54.5%	6.1%	3.0%	6.1%	3.0	
Cumulative Percent	27.3%	81.8%	87.9%	90.9%	97.0%	100%	100%
Mean Score = 2.15, Standard Deviation = 1.23							
THE OFF ROAD TRAINING AT BOREHAM IS EXCITING							
Frequency	16	15	1	1			
Percent	48.5%	45.5%	3.0%	3.0%			
Cumulative Percent	48.5%	93.9%	97.0%	100.0%	100%	100%	100%
Mean Score = 1.61, Standard Deviation = 0.704							

5.13 Attitudes Towards What is Being Taught (Roadcraft)

From table 5.14 and 5.15, it can be seen that the vast majority of trainees had a positive attitude towards what was being taught at the beginning and after each phase of training. The number of trainees possessing positive attitudes is large on all scales, ranging from 88-98% of the sample. The attitudes remain constant with length of time

trained on the two scales used, with only slight fluctuations occurring. At all stages of the course, the strength of the positive attitudes expressed are strong (with the majority of individuals possessing positive attitudes scoring one on the seven point scale).

Table 5.14: The Rating of the Statement "Standard Police Driver Training has Enabled me to Skilfully Control a Vehicle"

Skilfully Control a Vehicle	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
AT BEGINNING							
Frequency	40	24	6	1			
Percent	56.3%	33.8%	8.5%	1.4%			
Cumulative Percent	56.3%	90.1%	98.6%	100.0%	100.0%	100.0%	100.0%
AFTER STANDARD PHASE							
Frequency	25	32	8	3		1	
Percent	36.2%	46.4%	11.6%	4.3%		1.4%	
Cumulative Percent	36.2%	82.6%	94.2%	98.6%	100.0%	100.0%	100.0%
AFTER RESPONSE PHASE							
Frequency	11	20	1	1			
Percent	33.3%	60.6%	3.0%	3.0			
Cumulative Percent	33.3%	93.9%	97.0%	100.0%	100.0%	100.0%	100.0%

Table 5.15: The Rating of the Statement "Roadcraft Should be Complied to at all Times"

Roadcraft Should be Complied to	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
AT BEGINNING							
Frequency	32	27	8	2	2		
Percent	45.1%	38.0%	11.3%	2.8%	2.8%		
Cumulative Percent	45.1%	83.1%	94.4%	97.2%	100.0%	100.0%	100.0%
AFTER STANDARD PHASE							
Frequency	28	22	13	3	3		
Percent	40.6%	31.9%	18.8%	4.3%	4.3%		
Cumulative Percent	40.6%	72.5%	91.3%	95.7%	100.0%	100.0%	100.0%
AFTER RESPONSE PHASE							
Frequency	9	13	7	4			
Percent	27.3%	39.4%	21.2%	12.1%			
Cumulative Percent	27.3%	66.7%	87.9%	100.0%	100.0%	100.0%	100.0%

An analysis of mean scores discovered that there are no significant differences in the mean scores of trainees before training, or after each phase of training ($p > 0.05$).

Table 5.16 and 5.17 show that the degree of change in attitudes before and after training is small, with the majority of trainees having the same attitude before and after training, or only changing it by one point on the scales used, with very little variation occurring with length of training. However, of the trainees that do change their attitudes, most change towards a more negative attitude towards what is being taught, and these individuals constitute a large minority of the sample (34-43%). This seems to affect to a greater degree trainees who only undertook the standard phase for the rating of "driver training has enabled me to skilfully control a vehicle," although these differences are only small and not significant ($p > 0.05$). Although the overall changes are small, they may indicate that training is not further developing these attitudes, with some individuals changing their attitudes on experiencing what is taught on the course.

Table 5.16: The Degree of Change Since the Beginning of Training in the Rating of the Statement "Standard Police driver Training has Enabled me to Skilfully Control a Vehicle"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement						
	-3	-2	-1	0	1	2	3
STANDARD PHASE ONLY							
Frequency			3	19	12	4	
Percent			8.1%	51.4%	32.4%	10.8%	
STANDARD AND RESPONSE PHASE							
Frequency		1	7	11	9	1	
Percent		3.4%	24.1%	37.9%	31.0%	3.4%	

Table 5.17: The Degree of Change Since the Beginning of Training in the Rating of the Statement " Roadcraft Should be Complied to at all Times"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement						
	-4	-2	-1	0	1	2	3
STANDARD PHASE ONLY							
Frequency		1	8	13	8	5	2
Percent		2.7%	21.6%	35.1%	21.6%	13.5%	5.4%
STANDARD AND RESPONSE PHASE							
Frequency	1	2	2	14	8	2	2
Percent	3.4%	6.9%	6.9%	48.3%	21.6%	6.9%	6.9%

In summary, it can be seen that throughout the course, the vast majority of trainees possessed strong positive attitudes towards what was being taught. Attitudes only slightly varied before and after training and with the length of training given. A large minority of trainees did lessen the degree to which they possessed positive attitudes. This may mean that the training is not further developing these attitudes, although it must be noted that the changes are only slight.

The strong positive attitudes towards what was being taught even at the beginning of training is perhaps due to trainees having read about what was to be taught on the course (Roadcraft, 1977), in the hope that this would improve their chances of passing the driving test at the end of training. In addition, they might have been given information about the training by their peers who have undertaken the training. Alternatively, superior officers could have informed them about the quality and benefit of the training.

5.14 Instructor Attitude Assessment

From table 5.18, it can be seen that the instructors believe that the majority of trainees who undertook the standard phase and the response phase of training have a positive attitude towards driving. Instructors believe that these attitudes are strong, with the majority of trainees being given a score of two for the standard and response phase and the vast majority scoring between one and three. Trainees' attitudes on the response phase are rated higher, with more people scoring one and two.

Table 5.18: Instructors Assessment of Trainees Attitudes

Very Good 1 2 3 4 5 6 7 Very Bad				
Scale Values	Standard Phase		Response Phase	
	No	%	No	%
1	18	25.4%	4	12.1%
2	31	43.7%	18	54.5%
3	10	14.1%	9	27.3%
4	7	9.9%	2	6.3%
5	5	7.0%		

From analysing the mean scores on table 5.19, it can be seen that after each phase of training, the trainees who undertook the extra two week response phase of training have significantly lower mean scores than trainees who only undertook the standard four week phase of training ($p < 0.001$). Instructors therefore seem to perceive that they are selecting individuals with more appropriate attitudes towards driving (in terms of the objectives of the course; see appendix 1) for the extra two week response phase of training. However, in comparing the attitude assessment (made by driving instructors) of trainees who undertook the extra two weeks response phase of training after the standard phase and after the response phase, it can be seen that a significant decrease overall attitude occurs after undertaking the response phase of training ($p < 0.05$). These findings show that whilst the training seems to be effective in teaching appropriate attitudes towards driving in terms of the objectives of the course (see appendix 1) there seems to be a decrease in attitudes towards driving after the extra two week response phase. However, it is worth noting that these results may have been due to instructors being more familiar with their own marking system, and hence having difficulty with the scales used for this element of the research.

Table 5.19: Comparison of the Differences in Mean Scores for Instructors Attitude Assessment of Trainees

Comparison of Mean Scores (T Test)	AFTER 4 WEEKS		AFTER 6 WEEKS		AFTER 4 WEEKS	AFTER 6 WEEKS
	S	R	S	R	R	R
Mean Score	2.83	1.57		2.24	1.57	2.24
Standard Deviation	1.22	0.51		0.78	0.51	0.78
T value	5.33		* 2.45		-4.88	
Degrees of Freedom	69		* 73		28	
2 Tail Probability	0.000		* 0.017		0.047	

Key: S = Standard Phase Only
R = Standard and Response Phase
* = Significance Calculated Using Standard Phase Only Scores After Four Weeks

A comparison between the instructors' assessment of trainees' attitudes, and the instructors' assessment of trainees' skills (see section 5.41) reveals a strong positive correlation between skill and attitude assessments after the standard phase (0.8025, $p < 0.001$) and after the extra two week response phase (0.7050, $p < 0.001$) of training. This finding demonstrates that instructors may believe that attitudes and skill levels are closely linked. Thus, an individual's attitude will be matched in terms of skill level, with little variation occurring between the attitude and the skill level of an individual.

A comparison between the instructors' assessment of attitudes and the direct attitude assessment obtained from trainees revealed only weak correlations, with significant correlations only being discovered for three of the 34 attitude statements used for the direct attitude assessment ($r = 0.4\text{-}0.5$, $p < 0.001\text{-}0.01$). This shows that there are fundamental differences in instructors' assessment of attitudes, and the direct attitude assessment obtained from the trainees, and again demonstrates that instructors may believe that attitudes and skill levels are closely linked, finding it difficult to differentiate between them.

5.15 Summary of Direct Attitude Measurement

In terms of the objectives of the course (see appendix 1), it seems that the vast majority of trainees have appropriate attitudes towards the skills taught on the course. However, a small majority of trainees also possess inappropriate attitudes towards speed, thrill, and excitement. The training appears to have little effect on changing these attitudes, with the response phase in-fact enhancing them. In addition, the trainees selected for the response phase of the training possess these attitudes to a greater degree than trainees who only undertook the standard phase both before and after training.

The direct attitude measurement therefore indicated the development of appropriate attitudes towards what was being taught, but inappropriate attitudes towards speed, thrill, and excitement.

5.2 SEMI-DIRECT ATTITUDE MEASUREMENT

5.21 Introduction

The semi-direct attitude measurement asked trainees to answer a series of open ended questions before and after driver training (see chapter 4, section 4.114). From the answers to the questions, inferences have been made regarding trainees' attitudes towards driving, concentrating on attitudes towards speed, thrill, excitement, and what is taught on the course.

5.22 Reasons for Joining the Police Force

From table 5.20, it can be seen that thrill and excitement seeking is a reason for joining the police force, but is only stated by 11% of trainees. It seems that there are numerous factors which attract people to the police force and excitement seeking is only a factor stated by a minority of trainees. It can also be seen from table 5.20 that the intrinsic merits of policing (for example, personal satisfaction, job satisfaction, job variety) are the primary reasons for joining the police force, with the instrumental rewards that it provides (for example, financial benefits) of secondary importance. This finding was also discovered by previous studies on the kinds of people who become police officers (Bradley et al, 1986, p159-161).

Table 5.20: Reasons for Joining the Police Force

Reasons for Joining the Police Force	No	%
Career opportunity.....	38	53.5%
Financial benefits.....	20	28.2%
Personal satisfaction.....	20	28.2%
Like to work outdoors.....	6	8.5%
Job satisfaction.....	20	28.2%
Variety of work undertaken.....	46	64.8%
Meeting/helping people.....	20	28.2%
Comradeship/part of a team.....	3	4.2%
Interested in police work.....	15	21.1%
The sport.....	2	2.8%
Exciting career/chance of action.....	8	11.3%
Grew up in that environment.....	1	1.4%
To join the Traffic Division.....	1	1.4%
Responsibility.....	2	2.8%
Total.....	71	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

The direct attitude statements (used in the direct attitude measurement, section 5.1) of the trainees who stated "exciting career/chance of action" as a reason for joining the police force (from table 5.20) were evaluated to discover whether they differed significantly from trainees in general. These can be seen in table 5.21. From table 5.21, it can be seen that attitudes towards what is being taught on the course are similar to trainees in general (see section 5.13). However, attitudes towards speed, thrill, and excitement are slightly less positive, with the trainees who undertook the response phase of training having slightly less positive attitudes towards speed, thrill, and excitement. This is interesting, as the opposite was the case for trainees who undertook the response phase of training in general (see section 5.122). Despite this, a large minority of trainees maintain a positive attitude towards speed, thrill, and excitement. As with the direct attitude measurement in general (see section 5.1), training seems to have little effect on the attitudes towards what is taught on the course, with attitudes towards speed, thrill, and excitement becoming slightly more positive.

These findings show that trainees who state that thrill and excitement seeking was a reason for joining the police force do not necessarily have more inappropriate attitudes towards driving than trainees in general (in terms of the objectives of the course, see appendix 1). Perhaps in undertaking initial training, these beliefs regarding the police force were made apparent to the officers training such individuals, and attempts may have been made to eradicate them, possibly leading to less positive attitudes towards speed, thrill, and excitement. However, it must be noted that the number of trainees used in this evaluation were small (eight trainees), and may thus not represent the opinions of all new police recruits who join the police in pursuit of thrill and excitement.

Table 5.21: Direct Attitude Statements of Trainees who Stated "Exciting Career/Chance of Action as a Reason for Joining the Police Force

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree								
Scales Used	1	2	3	4	5	6	7	Mean
	No	No	No	No	No	No	No	No
SCALE A								
S (AT BEGINNING)		1		1	2			4.0
R (AT BEGINNING)			1	1	1	1		4.5
S (AFTER STD PHASE)			1	3				3.8
R (AFTER STD PHASE)		1	2	1				3.0
R (AFTER RES PHASE)			1	2				3.7
SCALE B								
S (AT BEGINNING)	1		1	2				3.0
R (AT BEGINNING)		1	1		1	1		4.0
S (AFTER STD PHASE)	1		2	1				2.8
R (AFTER STD PHASE)		2		2				3.0
R (AFTER RES PHASE)		1		2				3.7
SCALE C								
S (AT BEGINNING)		3		1				2.5
R (AT BEGINNING)		2			1	1		3.8
S (AFTER STD PHASE)	1		2	1				2.8
R (AFTER STD PHASE)			2	2				3.5
R (AFTER RES PHASE)			2	1				3.3
SCALE D								
S (AT BEGINNING)	3	1						1.3
R (AT BEGINNING)	2	1	1					1.8
S (AFTER STD PHASE)	2	1	1					1.8
R (AFTER STD PHASE)		4						2.0
R (AFTER RES PHASE)	1	2						1.7
SCALE E								
S (AT BEGINNING)	2	2						1.5
R (AT BEGINNING)	2		1		1			2.5
S (AFTER STD PHASE)	1	2	1					1.5
R (AFTER STD PHASE)	2		2					1.5
R (AFTER RES PHASE)	1		1	1				1.0

Key: S= Standard Phase Only
R= Standard and Response Phase
A= Driving With Flashing Blue Lights will be Exciting
B= High Speed Driving is Thrilling
C= Driving in an Emergency will be Exciting
D= Driver Training/ Skilfully Control a Vehicle
E= Roadcraft Should be Complied to at all Times

5.23 Trainees who Want to Join the Traffic Division

Table 5.20 reveals that only 1.4% of trainees initially joined the police force to join the Traffic Division. However, 20% of trainees stated they wanted to become a member of the Traffic Division at the beginning of driver training, (approximately two years after initially joining the police force) and 17% after the standard phase of driver training. It seems that having undertaken the initial training required to become a Police Officer, more Police Officers want to join the Traffic Division. This may be due to actual exposure to aspects of police work during training, giving trainees the opportunity to see what work in the Traffic Division is actually like, hence leading to changing impressions of the Traffic Division. Alternatively, it could be that some respondents who state "career opportunity" as a reason for joining the police force (on table 5.20) are referring to a career within the Traffic Division. There may thus not be such a large difference in trainees who want to join the Traffic Division before and after the initial training required to become a Police Officer.

The small change in the number of trainees who want to join the Traffic Division at the beginning and after standard driver training (from 20% to 17%) shows that the standard driver training has little effect on aspirations to join the Traffic Division. This may be due to the course concentrating on teaching safe driving, rather than promoting and demonstrating the work of the Traffic Division.

A comparison of the mean scores of attitudes towards speed and thrill and what is being taught (used in the direct attitude measurement, see section 5.1) revealed that the trainees who do not aspire to join the Traffic Division have slightly more positive attitudes towards speed and thrill, with little variation in attitudes towards what is being taught on the course. However, t test results showed that the differences in mean scores were not significant ($p > 0.05$) for all scales used except one (the rating of "roadcraft should be complied to at all times" after four weeks training, t value = -2.10, degrees of freedom = 67, $p = 0.039$) both before and after standard training. The differences are therefore due to chance, rather than actual differences between sub-groups of police officers.

Due to the small number of trainees aspiring to join the Traffic Division, the answers obtained from these trainees may not represent the opinions of the majority of officers who want to join the Traffic Division, and should therefore be treated with caution.

Table 5.22 shows that the majority of those who wanted to join the Traffic Division expressed an interest in the driving task, a desire to improve road safety, and to catch reckless and poor drivers as reasons for wanting to join the Traffic Division. Overall, there was very little difference between what trainees said at the beginning of training than after the standard phase of training. Only one trainee expressed that the thrill of driving a powerful car was a reason for wanting to join the Traffic Division. Although this trainee went on to undertake the response phase of training, it must be noted that 'he' only stated this as a reason at the beginning of training. However, table 5.23 shows that an evaluation of this trainee's direct attitude statements (used in the direct attitude measurement, see section 5.1) reveals that although attitudes towards what is being taught are similar to trainees who undertook the response phase of training in general, attitudes towards speed, thrill, and excitement are more positive, with training having little effect on these attitudes. This trainee's reason for wanting to join the Traffic Division may therefore be indicative of 'his' overall positive attitude towards speed, thrill, and excitement. Despite these findings only referring to one trainee, it is worrying that the training does not appear to have an effect on an extreme example of an inappropriate attitude towards speed, thrill, and excitement (in terms of the objectives of the course, see appendix 1).

Table 5.22: Reasons why Trainees Wanted to Join the Traffic Division

Why Trainees Wanted to Join the Traffic Division	No	%
AT BEGINNING OF TRAINING		
Interested in traffic law/crime.....	8	61.5%
I want to learn more about driving.....	1	7.7%
Catch and correct drink/wreckless/poor drivers.....	2	15.4%
I like driving and am interested in vehicles.....	6	46.2%
Improve road safety/reduce the number of road deaths.....	3	23.1%
Interested in why accidents happen.....	1	7.7%
Thrill of driving a powerful car.....	1	7.7%
Desire to instruct.....	1	7.7%
Total.....	13	100.0%
AFTER STANDARD PHASE (4 WEEKS)		
Interested in traffic law/crime.....	6	50.0%
I want to learn more about driving.....	2	16.7%
Catch and correct drink/wreckless/poor drivers.....	1	8.3%
I like driving and am interested in vehicles.....	5	41.7%
Improve road safety/reduce the number of road deaths.....	1	8.3%
Total.....	12	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.23: Direct Attitude Statements of the Trainee who Stated "Thrill of Driving a Powerful Car" as a Reason for Wanting to Join the Traffic Division

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree								
Scales Used	1	2	3	4	5	6	7	Mean
	No	No	No	No	No	No	No	No
SCALE A								
AT BEGINNING		1						2.0
AFTER STANDARD PHASE		1						2.0
AFTER RESPONSE PHASE		1						2.0
SCALE B								
AT BEGINNING	1							1.0
AFTER STANDARD PHASE	1							1.0
AFTER RESPONSE PHASE		1						2.0
SCALE C								
AT BEGINNING		1						2.0
AFTER STANDARD PHASE	1							1.0
AFTER RESPONSE PHASE			1					3.0
SCALE D								
AT BEGINNING	1							1.0
AFTER STANDARD PHASE		1						2.0
AFTER RESPONSE PHASE		1						3.0
SCALE E								
AT BEGINNING	1							1.0
AFTER STANDARD PHASE		1						2.0
AFTER RESPONSE PHASE		1						2.0

Key: A= Driving With Flashing Blue Lights will be Exciting
B= High Speed Driving is Thrilling
C= Driving in an Emergency will be Exciting
D= Driver Training/ Skilfully Control a Vehicle
E= Roadcraft Should be Complied to at all Times

The direct attitude statements (used in the direct attitude measurement, section 5.1) of the trainees who stated "Improve road safety/reduce the number of deaths" as a reason for wanting to join the Traffic Division (from table 5.22) were also evaluated to discover whether they differed significantly from trainees in general. These can be seen in table 5.24. From table 5.24, it can be seen that attitudes towards what is being taught on the course are similar (see section 5.13). However, attitudes towards speed, thrill, and excitement are considerably different. For trainees who only undertook the standard phase of training, all trainees possess a neutral or negative attitude, which are considerably more negative than for trainees who undertook the standard phase in general. This remains relatively unchanged with training. However, the trainee who undertook the standard and response phase of training possessed positive attitudes, being slightly stronger than for trainees who undertook the response phase in general.

The strength of this attitude slightly weakens after the standard phase of training, with little change after the response phase of training. It seems that the trainees who only undertook the standard phase of training who stated "Improve road safety/reduce the number of deaths" have more appropriate attitudes towards speed, thrill, and excitement than other trainees (in terms of the objectives of the course, see appendix 1), yet the trainee who undertook the standard and response phase who stated this possessed a more inappropriate attitude. Trainees who state "improve road safety/reduce the number of deaths" as a reason for wanting to join the Traffic Division may therefore possess appropriate attitudes towards what is being taught on the course (which emphasises safety, see appendix 1), but do not necessarily possess appropriate attitudes towards speed, thrill, and excitement. These findings suggest that to state "improve road safety/reduce the number of deaths" does not necessarily indicate an appropriate attitude towards road safety in terms of the objectives of the course (see appendix 1). An inappropriate attitude seems to depend on whether individuals were selected for the response phase of training, perhaps indicating a problem with selection procedures for this phase of training. However, it must be noted the numbers involved in this evaluation were small (three trainees, with only one trainee undertaking the response phase of training) and should therefore be treated with caution.

In summary, it seems that in general, the motives of individuals who want to join the Traffic Division are appropriate (in terms of the objectives of the training course, see appendix 1). The role of the Police Officer working in the Traffic Division obviously involves far more than merely driving, and this may be why high speed driving is not listed as a primary reason for aspiring to join the Traffic Division.

Table 5.24: Direct Attitude Statements of Trainees who Stated "Improve Road Safety/Reduce the Number of Deaths" as a Reason for Wanting to Join the Traffic Division

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree								
Scales Used	1	2	3	4	5	6	7	Mean
	No	No	No	No	No	No	No	No
SCALE A								
S (AT BEGINNING)							2	5.0
R (AT BEGINNING)		1						2.0
S (AFTER STD PHASE)					1		1	4.5
R (AFTER STD PHASE)			1					3.0
R (AFTER RES PHASE)		1						2.0
SCALE B								
S (AT BEGINNING)							2	7.0
R (AT BEGINNING)		1						2.0
S (AFTER STD PHASE)					1		1	6.0
R (AFTER STD PHASE)			1					3.0
R (AFTER RES PHASE)			1					3.0
SCALE C								
S (AT BEGINNING)						2		6.0
R (AT BEGINNING)	1							1.0
S (AFTER STD PHASE)						1	1	6.5
R (AFTER STD PHASE)			1					3.0
R (AFTER RES PHASE)			1					3.0
SCALE D								
S (AT BEGINNING)	1	1						1.5
R (AT BEGINNING)		1						2.0
S (AFTER STD PHASE)	1		1					2.0
R (AFTER STD PHASE)		1						2.0
R (AFTER RES PHASE)	1							1.0
SCALE E								
S (AT BEGINNING)	2							1.0
R (AT BEGINNING)	1							1.0
S (AFTER STD PHASE)	1	1						1.5
R (AFTER STD PHASE)	1							1.0
R (AFTER RES PHASE)	1							1.0

Key: S= Standard Phase Only
R= Standard and Response Phase
A= Driving With Flashing Blue Lights will be Exciting
B= High Speed Driving is Thrilling
C= Driving in an Emergency will be Exciting
D= Driver Training/ Skilfully Control a Vehicle
E= Roadcraft Should be Complied to at all Times

5.24 Trainee Rating of the Course

From table 5.25, it can be seen that the standard and response phase are given positive scores by all trainees who undertook them. The rating for the standard and the response phase is strong, with the majority of trainees scoring 1 and the vast majority either scoring 1 or 2 on the scale. The response phase is rated higher than the standard phase, with more people scoring 1 and 2 rather than 3; although these differences were not significant ($p < 0.05$).

These results show that trainees have a positive attitude towards what is being taught on the course, and how it is taught.

Table 5.25: Trainee Rating of the Standard/Response Course

Very Good 1 2 3 4 5 6 7 Very Bad				
Scale Values	Standard Phase		Response Phase	
	No	%	No	%
1	30	44.8%	16	50.0%
2	25	37.3%	14	43.8%
3	12	17.9%	2	6.3%

5.25 Good and Bad Points of the Training Course

Table 5.26 shows that the most frequently mentioned good points of the standard phase training relate to improved driving ability, elements of the driving technique being taught, and the standard of tuition. Table 5.27 shows that the most frequently mentioned bad points of the standard phase training course relate to teaching methods, assessment methods, the pressure to do well, and not enough actual driving time. From table 5.26, it can be seen that the most frequently mentioned good points of the extra two week response phase relate to improved driving ability, level of tuition, and the training which emphasised high speed driving (Boreham, blue lights training, and increasing driver skill at high speed with safety). Table 5.27 shows that the most frequently mentioned bad points of the extra two week response phase relate to pressure, assessment, and length of course. For both phases trainees stated approximately one third more good points than bad points.

An interesting point is that a minority of trainees at both phases of training emphasised that the course increased driver skill at high speed with safety. 80% of trainees who stated this as a good point after the standard phase of training went on to undertake the extra two week response phase, and the number of trainees who stated this as a good point increased by 43% (from 4-7 trainees) after the response phase. Perhaps having undertaken the course, a minority of trainees are emphasising appropriate attitudes towards speed in terms of the course objectives (see appendix 1). To discover whether this is the case, an evaluation was made of the scores obtained from the direct attitude measurement for trainees who stated "improve driver skill at high speed with safety" as a good point and also good points that emphasised speed, to establish whether they differed significantly. This can be seen in tables 5.28-5.30. From tables 5.28-5.30, it can be seen that for all the trainees who listed good points that emphasised speed, attitudes towards what is being taught on the course are similar

to trainees in general (see section 5.13). However, attitudes towards speed, thrill, and excitement are more positive. As with the direct attitude measurement (see section 5.1), training also seems to have little overall effect on the rating of all the attitude scales. This finding does seem to indicate that the trainees who emphasise the speed elements of the course (even those emphasising the use of speed with safety) as good points may have inappropriate attitudes towards speed to a greater degree than trainees in general, although maintain a positive attitude towards what is being taught on the course. However, it must be noted that the numbers involved in this evaluation are small (2-7 trainees) and should therefore be treated with caution.

Overall, these findings suggest that whilst there is an overall positive attitude to what is being taught and those teaching it on both phases of the training, there is a tendency to have a positive attitude towards the speed elements of the training for a minority of those who undertake the extra two week response phase. It is possible that such comments may lead to the inappropriate use of speed (in terms of the objectives of the training course, see appendix 1) when driving, especially as it was discovered from the direct attitude measurement that trainees making such comments have positive attitudes towards speed, thrill, and excitement. These findings also show too much pressure may be exerted on trainees by instructors. Such pressure should be avoided as it is essential that trainees remain calm and relaxed when driving, and not to let personal feelings and emotions affect driving.

Table 5.26: Good Points of the Standard/Response Driver Training Course

Good Points of the Standard/Response Training Course	No	%
AFTER STANDARD PHASE (4 WEEKS)		
A very good course	7	12.5%
Not too much theory	1	1.8%
Went along at a good pace	1	1.8%
Insight into all round driving	9	16.1%
Group spirit	2	3.6%
Standard of tuition	8	14.3%
Variety of driving and cars	5	8.9%
Better observation	10	17.9%
Increase driver skill at high speed with safety	4	7.1%
Raised my driving standard	11	19.6%
Increased confidence	5	8.9%
Awareness of personal limitations	6	10.7%
Structured learning	4	7.1%
Drive systematically	8	14.3%
Mock situation driving	1	1.8%
Knowing capabilities of vehicle	3	5.4%
Teaches safe positioning/cornering	1	1.8%
Total	56	100.0%
AFTER RESPONSE PHASE (6 WEEKS)		
A very good course	1	3.4%
Not too much theory	1	3.4%
Insight into all round driving	2	6.9%
Group spirit	1	3.4%
Standard of tuition	3	10.3%
Variety of driving and cars	2	6.9%
Better observation	7	24.1%
Increase driver skill at high speed with safety	7	24.1%
Raised my driving standard	6	20.7%
Increased confidence	2	6.9%
Drive systematically	2	6.9%
Time	1	3.4%
Mock situation driving	2	6.9%
Knowing capabilities of vehicle	2	6.9%
Training given at Boreham	4	13.8%
Blue light training	3	10.3%
Attitude teaching	1	3.4%
Total	29	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.27: Bad Points of the Standard/Response Driver Training Course

Bad Points of the Standard/Response Training Course	No	%
AFTER STANDARD PHASE (4 WEEKS)		
Out of date teaching methods.....	2	5.9%
Poor instructor teaching methods and assessment.....	6	17.6%
Not knowing final result until the last day.....	5	14.7%
Not enough actual driving time/day.....	6	17.6%
Not knowing what is expected of you.....	4	11.8%
Pressure/Competition.....	7	20.6%
Standard course is not long enough.....	5	14.7%
Unnecessary double-de-clutching.....	1	2.9%
Poor method of assessment (exam and test drive).....	5	14.7%
Only people who enjoy thrill of speed go on response course.....	1	2.9%
Hunting for overtakes when there is little chance of progress.....	1	2.9%
Emphasis on Speed.....	1	2.9%
Total.....	34	100.0%
AFTER RESPONSE PHASE (6 WEEKS)		
Not knowing final result until the last day.....	1	8.3%
Pressure/Competition.....	3	25.0%
6 weeks is too long.....	5	41.7%
Standard course is not long enough.....	1	8.3%
Over-emphasis on bandit chasing.....	2	16.7%
More emphasis on blue lights driving....	1	8.3%
As speeds increased, safety margins were often reduced.....	1	8.3%
Total.....	12	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.28: Direct Attitude Statements of Trainees who Stated "Increase Driver Skill at High Speed With Safety" as a Good Point of the Response Phase of Training

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree								
Scales Used	1	2	3	4	5	6	7	Mean
	No	No	No	No	No	No	No	No
SCALE A								
AT BEGINNING		3	1		1			2.8
AFTER STANDARD PHASE		3		1		1		3.2
AFTER RESPONSE PHASE		4	2	1				2.1
SCALE B								
AT BEGINNING	1	2	1		1			2.6
AFTER STANDARD PHASE	1	1		2	1			3.2
AFTER RESPONSE PHASE		3	2	2				2.9
SCALE C								
AT BEGINNING	1	1		2		1		2.2
AFTER STANDARD PHASE	2	1	1	1				2.2
AFTER RESPONSE PHASE	2	1	4					1.9
SCALE D								
AT BEGINNING	4	1						1.2
AFTER STANDARD PHASE	3	2						1.4
AFTER RESPONSE PHASE	3	4						1.6
SCALE E								
AT BEGINNING	3	2						1.4
AFTER STANDARD PHASE	2	2	1					1.8
AFTER RESPONSE PHASE	2	3	2					2.0

Key: A= Driving With Flashing Blue Lights will be Exciting
B= High Speed Driving is Thrilling
C= Driving in an Emergency will be Exciting
D= Driver Training/ Skilfully Control a Vehicle
E= Roadcraft Should be Complied to at all Times

Table 5.29: Direct Attitude Statements of Trainees who Stated "Training Given at Boreham" as a Good Point of the Response Phase of Training

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree								
Scales Used	1	2	3	4	5	6	7	Mean
	No	No	No	No	No	No	No	No
SCALE A								
AT BEGINNING	1	1	1					2.0
AFTER STANDARD PHASE		1	1	1				3.0
AFTER RESPONSE PHASE		1	2	1				2.0
SCALE B								
AT BEGINNING	2		1					1.7
AFTER STANDARD PHASE			2	1				3.3
AFTER RESPONSE PHASE		1		3				3.5
SCALE C								
AT BEGINNING	1	1		1				2.3
AFTER STANDARD PHASE		2		1				2.7
AFTER RESPONSE PHASE		2	1	1				2.8
SCALE D								
AT BEGINNING		1	2					2.7
AFTER STANDARD PHASE		2	1					2.3
AFTER RESPONSE PHASE	1	3						1.8
SCALE E								
AT BEGINNING	1	1	1					2.0
AFTER STANDARD PHASE	1	2						1.7
AFTER RESPONSE PHASE	1	1	1	1				2.5

Key: A= Driving With Flashing Blue Lights will be Exciting
B= High Speed Driving is Thrilling
C= Driving in an Emergency will be Exciting
D= Driver Training/ Skilfully Control a Vehicle
E= Roadcraft Should be Complied to at all Times

Table 5.30: Direct Attitude Statements of Trainees who Stated "Blue Light Training" as a Good Point of the Response Phase of Training

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree								
Scales Used	1	2	3	4	5	6	7	Mean
	No	No	No	No	No	No	No	No
SCALE A								
AT BEGINNING		1	1					2.5
AFTER STANDARD PHASE		1	1					2.5
AFTER RESPONSE PHASE		1	1	1				3.0
SCALE B								
AT BEGINNING		1	1					2.5
AFTER STANDARD PHASE		1	1					2.5
AFTER RESPONSE PHASE			1	2				3.7
SCALE C								
AT BEGINNING	1	1						1.5
AFTER STANDARD PHASE			2					3.0
AFTER RESPONSE PHASE		1	2					2.7
SCALE D								
AT BEGINNING	1	1						1.5
AFTER STANDARD PHASE		2						2.0
AFTER RESPONSE PHASE	1	2						1.5
SCALE E								
AT BEGINNING	1		1					2.0
AFTER STANDARD PHASE	1		1					2.0
AFTER RESPONSE PHASE	1			2				1.7

Key: A= Driving With Flashing Blue Lights will be Exciting
B= High Speed Driving is Thrilling
C= Driving in an Emergency will be Exciting
D= Driver Training/ Skilfully Control a Vehicle
E= Roadcraft Should be Complied to at all Times

In summary, these finding show that although a positive attitude towards what is being taught on the course and those teaching it was displayed, it may over-emphasise the speed element of the training, and also exert too much pressure on trainees. The course whilst generally perceived as being good could therefore be improved.

5.26 Summary of Semi-Direct Attitude Measurement

Only a small minority of trainees stated reasons for joining the police force and for wanting to join the Traffic Division that may cause the development of inappropriate attitudes towards driving in terms of the objectives of the course (see appendix 1). The vast majority of trainees had an overall positive attitude towards the training course. However, a small minority of trainees also had a negative attitude towards the way the course was taught and assessed. In addition, on the extra two week response phase, there is a tendency to have a positive attitude towards the speed elements of the training, which may lead to the development of inappropriate attitudes.

The semi-direct attitude measurement therefore indicates that some trainees may over-emphasize speed, thrill, and excitement in terms of the objectives of the course (see appendix 1), although the results are not as clear cut as the direct attitude measurement (section 5.1).

5.3 INDIRECT ATTITUDE MEASUREMENT

5.31 Introduction

The indirect attitude measurement analysed beliefs regarding five video sequences, and also applied a modified version of the Theory of Reasoned Action (see chapter 3, section 3.56) to measure attitudes towards the video sequences (see chapter 4, section 4.12). Videos 1-4 were shown to trainees at the end of the standard phase of training, whereas video 5 (pursuit training) was shown after the response phase of training. The results obtained from trainees were compared with Essex Police driving instructors, and also with a panel of 'driving experts.'

For all of the video sequences used, only a small number of beliefs regarding the video sequences were obtained from the Essex Police driving instructors (in comparison to trainees and driving 'experts'). As these were all qualified police driving instructors, it is felt that the small number of beliefs elicited is due to apathy regarding the research project, rather than a lack of knowledge regarding driving behaviour. This therefore has been taken into consideration on interpreting the results.

5.32 Analysis of Beliefs After the Standard Phase of Training

5.32.1 Videos 1-3

These three video sequences were of non police drivers who had only passed a standard Department of Transport driving test. As the contents of these videos were similar, they have been grouped together for analysis. A list of the positive and negative beliefs elicited from respondents can be seen in tables 5.31-5.37. These show that overall, there are no significant differences in the positive and negative beliefs between trainees (irrespective of the number of phases of training undertaken), police driving instructors, or 'driving experts.' Some differences are perhaps due to differences in the terminology used by the police force and driving 'experts' in describing beliefs. In addition, slight differences may be due to differences in beliefs regarding what constitutes good and bad driving. For example, "reversing, palming the wheel easily" (positive belief stated by driving 'experts' on table 5.33) would be regarded as a poor steering technique in terms of police driver training. Driving 'experts' also picked out more less salient features, perhaps due to their considerable experience of driving. However, a number of important differences were discovered which are as follows:

i) Table 5.31 shows that the majority of respondents gave positive beliefs regarding the first overtake on video one (61-71%). However, strictly speaking, in terms of the police driving technique (Roadcraft, 1977), the overtake was incorrectly undertaken, with the wrong gear chosen. This was confirmed by the Chief Inspector at the Essex Police Driving School. Such positive beliefs could have been expected from the driving 'experts' used for the research, as they do not all necessarily adopt the same driving techniques as the police. However, such positive beliefs stated by trainees and the Essex Police driving instructors were not expected, as they indicate that the overtaking technique may not be taught correctly, as if the technique was taught correctly, such beliefs would not be stated. This finding could also explain why the primary research (see chapter 4, section 4.112) discovered that the overtaking technique may be aggressive in the attitude that it develops, again perhaps being taught incorrectly.

ii) Table 5.32 shows that in video one, only a small minority of trainees, and none of the Essex Police driving instructors believed that a "poor overtake of the second lorry" was undertaken, yet the majority (58%) of driving 'experts' pointed this out. This manoeuvre (according to one of the driving 'experts' used in the research), not only involved an element of risk because of the poor visibility and narrow road, but also disturbed the lorry driver, causing 'him' to brake. The lack of emphasis of this point by trainees and the Essex Police driving instructors may again indicate a lack of emphasis on overtaking during training.

iii) In videos 1-3 (see tables 5.32, 5.34, and 5.36), the trainees undertaking the course, and the driving 'experts' believe that excessive speed was used for the circumstances (roadworks, roundabout, town). This refers to the driving shown in the videos at speeds of 30 mph or under. It therefore seems that trainees and 'experts' had appropriate beliefs in terms of the objectives of the course (see appendix 1) regarding the use of speed in 30 mph restriction zones. However, these beliefs were not stated by the Essex Police Driving instructors, although as stated in the introduction (section 5.31), this might have been due to the apathy of the driving instructors.

iv) Table 5.35 shows that two trainees (18%) who undertook the standard and response phase of training believed that "good pace" (that is, use of speed) was shown in the video three. However on table 5.36 the negative beliefs regarding video three show that overall, the majority respondents except Essex Police driving instructors possessed negative beliefs regarding the use of speed. It can therefore be concluded in terms of the objectives of the training course (see appendix 1), that a minority of trainees who undertook the extra two response phase of training possess inappropriate beliefs regarding the use of speed, although it must be noted that the numbers involved are small. In addition, as the Essex Police driving instructors did not mention any negative beliefs regarding the use of speed, it may be that not enough emphasis is placed on the use of speed.

Table 5.31: Positive Beliefs Regarding the Driving Behaviour Shown in Video 1

Positive Beliefs Elicited From Video 1	S		R		Essex Police		Driving Experts	
	No	%	No	%	No	%	No	%
Good first overtake.....	20	61%	18	64%	5	100	5	63%
Progressive/moved away quickly.....	3	9%	2	7%				
Bend assessment.....	6	18%	5	18%			1	13%
Motorway driving.....	5	15%	6	21%				
Horn warning before overtaking.....	3	9%	1	4%				
Showed caution whilst passing roadworks.....	1	3%	1	4%				
At roundabout, made sure it was clear to the right.....			1	4%				
Decreased speed and selected lower gear for bend.....	4	12%	5	18%			1	13%
Good pace.....	2	6%	2	7%				
Positioning at junction/corner/roundabout.....	5	5%	5	18%	4	80%	2	26%
Good following distance of HGV.....	13	39%	5	18%				
Acceleration away from hazards.....	4	12%	3	11%				
Smooth gear changing.....	4	12%			4	80%	1	13%
Good point shown in the video.....	1	3%						
Checking mirror before pulling in on dual carriageway.....			1	4%			1	13%
Straightening out open bends where visibility good.....							1	13%
Brisk acceleration on joining major road.....							2	26%
Lane discipline on approach to roundabout.....							1	13%
Good overtake of lorry on motorway.							2	26%
Good following distance on motorway behind transporter.....							1	13%
Overall speed for roadtypes.....							1	13%
Drove within his basic capabilities							1	1%
Total.....	33	100	28	100	5	100	8	100

Key: S = Trainees who Only Undertook the Standard Phase
R = trainees who Undertook the Standard and Response Phase
NB: Multiple Responses Mean Percentages May Not add up to 100%

Table 5.32: Negative Beliefs Regarding the Driving Behaviour Shown in Video 1

Negative Beliefs Elicited From Video 1	S		R		Essex Police		Driving Experts	
	No	%	No	%	No	%	No	%
Excessive speed for circumstances (r-works, r-about, town).....	16	42%	10	32%			4	33%
Driving too close/not slowing down for hazards.....	4	11%	7	23%			2	17%
No horn warning for overtakes.....	5	13%	4	13%				
Bad steering method.....	38	100	30	97%	5	100	9	75%
Using the gears to slow down.....	21	55%	18	58%			8	67%
Hand gestures to the lorry infront.	1	3%	1	3%				
Lack of use of the indicator.....	6	16%	4	13%				
Not taking into account the road surface and road works.....	2	5%	3	10%			3	25%
Too close to the van on the motorway.....	2	5%	2	7%			2	17%
Poor road positioning.....	12	32%	8	26%			5	42%
No mirror checks.....	13	34%	10	32%	4	80%	3	25%
Braking too sharply and too late in built up areas.....	7	18%	2	7%				
Impatience/stressed.....	4	11%	4	13%				
Throttle control.....	3	8%	2	7%				
Poor use of gears/wrong gear.....	13	34%	13	42%			4	33%
Cornering.....	8	21%	7	23%			4	33%
Poor observation following a lorry.	4	11%	4	13%			1	8%
Poor overtake of 2nd lorry.....	5	13%	9	29%			7	58%
No notice of roadsigns.....	1	3%	1	3%				
Harsh use of controls.....							1	8%
Driving appeared to be unplanned...							2	17%
Late exit on motorway/ cut in on van.....							5	42%
Lack of early observation at T junction.....							1	8%
No reduction in speed where road narrows.....							1	8%
Following too close behind HGV.....							3	25%
Co-ordination of foot controls.....							1	8%
Hazard recognition-assessment of hazards.....							2	17%
Total.....	38	100	31	100	5	100	12	100

Key: S = Trainees who Only Undertook the Standard Phase
R = Trainees who Undertook the Standard and Response Phase
NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.33: Positive Beliefs Regarding the Driving Behaviour Shown in Video 2

Positive Beliefs Elicited From Video 2	S		R		Essex Police		Driving Experts	
	No	%	No	%	No	%	No	%
Good distance kept between other vehicles.....	11	39%	8	30%			4	44%
Made progress (at junctions, in traffic).....			4	15%			1	11%
Speed work (most hazards/busy shopping areas).....	3	11%	8	30%			2	22%
Observation.....	1	4%	2	7%			2	22%
Use of indicator.....	4	14%	4	15%			1	11%
Caution and anticipation of hazards eg covered horn,pelican.....	8	29%	2	7%			2	22%
Good positioning on road.....	4	14%	4	15%				
Handbrake on when crossed at junction.....	11	39%	3	11%			2	22%
Use of gears.....	6	21%	8	30%	1	100	2	22%
Better consideration of traffic flow at r-abouts and junct's....	2	7%	1	4%				
Good cornering.....	1	4%	4	15%				
Doesn't cross arms when steering...	1	4%						
Good overtake of white van.....	1	4%	1	4%				
Checking mirror before pulling in on dual carriageway.....			1	4%			1	11%
Reversing- palming the wheel easily							1	11%
Appeared relaxed.....							2	22%
Initial driving appears to be restrained.....							1	11%
Gave room to cyclist and parked vehicles.....							1	11%
Total.....	28	100	27	100	1	100	9	100

Key: S = Trainees who Only Undertook the Standard Phase
R = Trainees who Undertook the Standard and Response Phase
NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.34: Negative Beliefs Regarding the Driving Behaviour Shown in Video 2

Negative Beliefs Elicited From Video 2	S		R		Essex Police		Driving Experts	
	No	%	No	%	No	%	No	%
Excessive speed for circumstances (hazards, busy areas).....	17	45%	14	45%	1	20%	4	36%
Driving too close/not slowing down for hazards.....	16	42%	11	35%			4	36%
No horn warnings given/failure to cover horn.....	13	34%	9	29%	5	100	3	27%
Bad steering method.....	37	97%	26	84%	5	100	9	82%
Gear changing technique (holding,wrong gear,change on bend).....	30	79%	26	84%	4	80%	7	64%
Poor use of mirrors/indicators.....	10	26%	7	23%			1	9%
Poor observation, eg reversing.....	10	26%	9	29%				
Driving and stopping too close to other vehicles.....	19	50%	10	32%			2	18%
Parked cars- drove too close and too fast.....	10	26%	2	7%	2	40%	6	55%
Bad car control/manoeuvres.....	2	5%	4	13%				
Lack of concentration/anticipation/awareness.....	4	11%	7	23%	3	60%	3	27%
Accelerating while vehicle infront is braking.....	1	3%	2	7%				
Excessive speed when reversing.....	4	11%	4	13%				
Braking too sharply and too late in built up areas.....	8	21%	6	19%			1	9%
Poor cornering/accelerated into bends/approached too fast.....	6	16%	3	10%				
Incorrect position on roads.....	5	13%	4	13%			3	27%
Not using handbrake at junctions...	4	11%	3	10%				
Poor overtake of 2nd lorry.....	5	13%	9	29%			2	18%
No notice of roadsigns.....	1	3%	1	3%			1	9%
Fidgety posture at the wheel.....							3	27%
Driving generally unplanned.....							1	9%
Tired or bored driver/not alert....							1	9%
Poor following distance.....							4	36%
Poor observation and planning.....							1	9%
Total.....	38	100	31	100	5	100	11	100

Key: S = Trainees who Only Undertook the Standard Phase
R = Trainees who Undertook the Standard and Response Phase
NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.35: Positive Beliefs Regarding the Driving Behaviour Shown in Video 3

Positive Beliefs Elicited From Video 3	S		R		Essex Police		Driving Experts	
	No	%	No	%	No	%	No	%
Occasionally keeping correct distance from vehicles infront..	6	24%	3	14%				
Good pace.....			4	18%				
Easing off power at farm.....	1	4%	2	9%				
Initial use of mirrors.....	17	68%	16	73%	5	100	3	100
Covered the horn on approach to one hazard.....	5	20%	1	5%			1	33%
Steering was good initially.....	8	32%	7	32%	2	40%	1	33%
Good use of handbrake at junction..	3	12%	2	9%				
Signals.....			1	5%				
driver appeared confident.....			1	5%			1	33%
Road positioning.....			2	9%				
Gear changing.....			3	14%				
Observation for overtake.....			1	5%				
Smooth gear changing.....	4	16%						
Checking mirror before pulling in on dual carriageway.....			1	5%				
Speed variation in relation to hazards.....					1	20%		
Total.....	25	100	22	100	5	100	3	100

Key: S = Trainees who Only Undertook the Standard Phase
R = Trainees who Undertook the Standard and Response Phase
NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.36: Negative Beliefs Regarding the Driving Behaviour Shown in Video 3

Negative Beliefs Elicited From Video 3	S		R		Essex Police		Driving Experts	
	No	%	No	%	No	%	No	%
Excessive speed for circumstances..	8	21%	10	32%			3	25%
Driving too close/not slowing down for hazards.....	9	24%	4	13%			4	33%
Speed too high in built up areas...	6	16%	6	19%			7	58%
Speed too high approaching bends...	9	24%	5	16%				
Speed too high over bridge/hillcreast/roundabout....	3	8%					1	8%
Excess speed for weather conditions	7	18%	2	7%				
Over revving/harsh acceleration at junctions.....	21	55%	15	48%	2	40%	5	42%
Poor acceleration sense.....	5	13%	2	7%	1	20%		
Poor steering technique.....	35	92%	27	87%	4	80%	11	92%
Lacked concentration.....	19	50%	19	61%			7	58%
Dangerous overtake of HGV.....	13	34%	10	32%			8	67%
Lack of observation.....	14	37%	10	32%			2	17%
Poor use of gears.....	15	39%	9	29%			2	17%
Incorrect gear for corners.....	8	21%	6	19%			1	8%
Ignoring road signs and hence driving too fast (speed, sch)...	19	50%	8	26%			1	8%
No horn warnings/poor use of horn	13	34%	13	42%	1	20%	2	17%
Poor use of mirrors/indicators.....	7	18%	3	10%			3	25%
Poor road position eg bends.....	8	21%	6	19%			1	8%
Dangerous/unsafe driving manoeuvre eg cyclist, verge, town.....	7	18%	3	10%			6	50%
Too close to vehicles infront.....	6	16%	2	7%			5	42%
Erratic driving/poor car control...	4	11%	1	3%			2	17%
Rough on car.....	4	11%	1	3%			1	8%
Very dirty windscreen/poor vision..	17	45%	11	35%	4	80%	11	92%
Did not put lights on when raining.			1	3%				
No safety margins.....			2	7%			1	8%
Poor reaction time.....	1	3%	3	10%				
Wipers on when dry.....	3	8%	5	16%	2	40%	4	33%
Harsh braking.....			4	13%			1	8%
Not giving way to other road users	4	11%	1	3%	1	20%	1	8%
Aggressive driving.....			1	3%			3	25%
Use of handbrake to stop.....	1	3%						
Anticipation/awareness of dangers					2	40%	2	17%
Unplanned driving.....							2	17%
Driving beyond capabilities in lane							1	8%
Total.....	38	100	31	100	5	100	12	100

Key: S = Trainees who Only Undertook the Standard Phase
R = Trainees who Undertook the Standard and Response Phase
NB: Multiple Responses Mean Percentages may not add up to 100%

5.32.2 Video 4

Video four was of a police driving instructor. A list of the positive and negative beliefs elicited from respondents an be seen in tables 5.37-5.38. On analysing tables 5.37-5.38, a number of points can be made:

i) As with video three, "good pace" is mentioned by a minority of trainees (6.5%) who undertook the standard and response phase of training, yet by no other category of respondent. This shows that speed may be over-emphasised by a small minority of such respondents.

ii) A large minority of trainees do emphasise the speed elements of the training (31-45%), with none of the Essex Police driving instructors, and only a very small minority of driving 'experts' (8-25%) emphasising these elements of the videos. This again could indicate an over-emphasis on speed as the salient good points of the video.

Table 5.37: Positive Beliefs Regarding the Driving Behaviour Shown in Video 4

Positive Beliefs Elicited From Video 4	S		R		Essex Police		Driving Experts	
	No	%	No	%	No	%	No	%
Good pace.....			2	7%				
Good acceleration, eg derestricted zone.....	7	18%	4	13%			3	25%
Smooth gear changing/correct use of gears.....	28	74%	20	65%	1	20%	6	50%
Good road positioning.....	21	55%	15	48%	3	60%	3	25%
Steering technique.....	23	61%	15	48%	5	100	4	33%
Use of mirror.....	10	26%	4	13%			3	25%
Good signals.....	3	8%	1	3%			1	8%
Use of horn/considering horn warnings.....	30	79%	20	65%	5	100	4	33%
Good/safe overtakes.....	23	61%	18	58%	5	100	6	50%
Good observation/forward planning..	12	32%	15	48%			3	25%
Safe following distance.....	3	8%	5	16%	1	20%	4	33%
Caution/awareness approaching hazards.....	5	13%	5	16%			4	33%
Good speed and distance on approach to hazards.....	12	32%	9	29%			3	25%
Safe driving/slowed down in town areas.....	2	5%	1	3%			3	25%
Consideration of other road users..	7	18%	5	16%			5	42%
Concentration.....	5	13%						
Progressive driving eg in derestricted area.....	3	8%	9	29%			1	8%
Use of speed.....	10	26%	6	19%			1	8%
Smooth/controlled/safe driving.....	1	3%	6	19%			1	8%
Use of system.....	3	8%	2	7%			1	8%
Cornering (speed and position).....	15	39%	7	23%			3	25%
Technically competent.....	1	3%						
Good inside sight lines prior to overtaking.....							1	8%
Confident.....							1	8%
Speed proportional to view.....							1	8%
Used hatched markings to position vehicle.....							2	17%
Total.....	38	100	31	100	5	100	12	100

Key: S = Trainees who Only Undertook the Standard Phase
R = Trainees who Undertook the Standard and Response Phase
NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.38: Negative Beliefs Regarding the Driving Behaviour Shown in Video 4

Negative Beliefs Elicited From Video 4	S		R		Essex Police		Driving Experts	
	No	%	No	%	No	%	No	%
Incorrect grip of steering wheel...	5	21%	4	16%				
Few mirror checks.....	7	29%	3	12%			3	27%
Second overtake crossed junction...	3	13%	3	12%			3	27%
Too fast for 3rd gear.....	12	50%	18	72%	2	40%	4	36%
Crossed hatchings on right turn....	9	38%	6	24%				
Failed to apply hand brake at a right turn.....	1	4%	1	4%				
Uses right hand for horn warning/should have covered horn	2	8%	1	4%			2	18%
Excess speed for circumstances.....	3	13%	5	20%			4	36%
Poor road positioning.....	2	8%					1	9%
Open hands on gear lever.....	2	8%					1	9%
Not driving to the system.....			1	4%				
Driving on the wrong side of the road when not necessary.....	3	13%	1	4%				
Head too rigid- didn't look about or move enough.....	1	4%						
Cornering on trailing throttle.....	1	4%						
Too close to HGV before overtaking.	1	4%					3	27%
Lack of caution for pedestrians....	1	4%	1	4%				
Not enough car consideration.....	1	4%						
Incorrect use of horn.....			1	4%			1	9%
No notice of roadsigns.....	1	4%	1	4%				
Excessive use of gearbox.....					2	40%	4	36%
Excessive hand movements on steering wheel at speed.....							4	36%
Quicker progress possible using heel-toe technique.....							1	9%
Insufficient allowance for hidden exits at high speed.....							3	27%
Crossed broken white lines to gain position.....							1	9%
Over revving engine.....					5	100		
Hard acceleration past driveway....							1	9%
Not enough consideration for horse and cart.....							1	9%
Waving thanks at times of danger...							1	9%
Total.....	24	100	25	100	5	100	11	100

Key: S = Trainees who Only Undertook the Standard Phase
R = Trainees who Undertook the Standard and Response Phase
NB: Multiple Responses Mean Percentages may not add up to 100%

In summary, although a comparison with the Essex Police driving instructors and the driving 'experts' revealed trainees possessed appropriate beliefs in terms of safe and unsafe driving in terms of the objectives of the course (see appendix 1), there is some evidence to suggest that a minority of trainees have inappropriate attitude towards speed.

5.33 Analysis of Beliefs After the Response Phase of Training

5.33.1 Video 5

Video five (the only video shown at this phase of the training) was of a mock police pursuit, and is an element of the response phase of training. A list of the positive and negative beliefs elicited from respondents an be seen in tables 5.39-5.40. On analysing tables 5.39-5.40, a number of points can be made:

i) Table 5.39 shows that a minority of trainees who undertook the response phase of training emphasise speed as salient. This however is not emphasised by driving 'experts' or the Essex Police driving instructors. This could indicate an over emphasis on speed by a minority of trainees.

ii) Table 5.40 shows that there are very few negative beliefs elicited from trainees of this video sequence, with no criticisms whatsoever from the Essex Police driving instructors. However, the driving 'experts' elicited numerous negative beliefs from the video sequence, which largely referred to excessive speed, although there are also beliefs that are critical of the driving technique used (for example, overtaking, road positioning, and gear selection) and also of the attitude displayed by the driver. Although it could be argued that these differences in beliefs are due to driving 'experts' not adopting the same driving technique as the police, it must be remembered that most advanced driver training is based on the police driving technique (Amey, 1989a). This implies that such differences may be due to the trainees and the Essex Police driving instructors possessing inappropriate beliefs (in terms of the objectives of the course; see appendix 1) regarding these elements of the training.

Table 5.39: Positive Beliefs Regarding the Driving Behaviour Shown in Video 5

Positive Beliefs Elicited From Video 5	R		Essex Police		Driving Experts	
	No	%	No	%	No	%
Good safe overtake.....	8	24%			2	25%
Kept a safe distance from bandit vehicle.....	16	47%			3	38%
Did not get sucked into difficult situations by the bandit.....	9	26%			1	13%
Courteous to other road users eg horn warning, hand signals.....	10	29%			2	25%
Safe and good judgement of speed...	4	12%			2	25%
Good/smooth car control.....	11	32%	1	20%	3	38%
Good use of gears.....	9	26%	4	80%		
Got close to bandit when possible, eg slow traffic, r-about.....	2	6%				
Always kept the bandit in sight....	4	12%				
Steering.....	2	6%	4	80%	1	13%
Good positioning.....	7	21%	4	80%	1	13%
Safety of obvious importance.....	2	6%				
Systematic drive.....	4	12%				
Remaining calm at all times.....	5	15%				
Very decisive/good anticipation....	2	6%			2	25%
Stability of vehicle maintained/steadiness.....	2	6%			1	13%
Good observation eg used offside road to get better view.....	6	18%	5	100	5	63%
Safe fast progressive cornering....	3	9%				
Good use of accelerator.....	1	3%				
No members of the public were put at risk.....	2	6%				
Technically competent.....					2	25%
Safe quick driving in normal traffic conditions.....			1	20%		
Good use of horn to warn when overtaking.....					1	13%
Use of mirrors.....			1	20%		
Confident.....					1	13%
Total.....	34	100	5	100	8	100

Key: R = Trainees who Undertook the Standard and Response Phase

NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.40: Negative Beliefs Regarding the Driving Behaviour Shown in Video 5

Negative Beliefs Elicited From Video 5	R		Driving Experts	
	No	%	No	%
Overtook on a blind bend/close overtake.....	9	82%	6	75%
At one stage the driver got too close to the bandit.....	1	9%		
Appeared to drive too fast past the tractor for his view.....	1	9%	1	13%
Too far away from vehicle.....	1	9%	1	13%
Poor signalling.....	1	9%	2	25%
Dangerous overtake, disturbing oncoming car.....			7	37%
Cumbersome push pull steering.....			5	63%
Excessive speed down Church Lane...			3	38%
Too quick down country lane.....			1	13%
Aggressive and dangerous overtakes on by-pass.....			2	25%
Should have used headlights and horn more.....			2	25%
Too close to civilian vehicles.....			3	38%
Crossing hatchings.....			1	13%
Swinging to the left before making a right turn.....			1	13%
Changing lanes on approach to and leaving roundabouts.....			2	25%
No thought or consideration to anyone.....			1	13%
Gear selection very late.....			1	13%
Poor vehicle control causing tyres to squeak.....			1	13%
Driver struggling to control emotions.....			1	13%
Attitude shocking.....			1	13%
Erratic driving.....			1	13%
Total.....	11	100	8	100

Key: R = Trainees who Undertook the Standard and Response Phase

NB: Multiple Responses Mean Percentages may not add 100%

5.34 Application of the Modified Ajzen-Fishbein Model

For each video sequence, the modified Ajzen-Fishbein model (excluding self efficacy, see chapter 4, section 4.122) was applied. A correlation was undertaken between the sum of trainees beliefs ($\Sigma b_i a_i$), and the sum of trainees overall attitude towards each video sequence. This revealed that no significant relationship existed ($p > 0.05$). As stated in chapter 4, this result was to be expected, as the model was applied using a range of behaviours, rather than a specific behaviour which is required for successful application of the model. This finding therefore confirms that the modified Ajzen-Fishbein model cannot be applied to measure attitudes towards several specific behaviours simultaneously.

5.35 Summary of Indirect Attitude Measurement

Although the indirect attitude measurement revealed positive beliefs regarding what is taught on the course, it also established that at all phases of training, some trainees possessed inappropriate beliefs (in terms of the objectives of the course; see appendix 1) regarding the use of speed and the overtaking technique. As some of the Essex Police driving instructors also possessed such beliefs, it appears that trainees may be taught incorrectly regarding such manoeuvres. The application of the modified Ajzen-Fishbein model revealed (as expected) that the model could not be applied to a range of specific driving behaviours.

5.4 SKILL ASSESSMENT

5.41 Introduction

The driving skill assessment measured trainees' driving skills after the four week standard phase and after the extra two week response phase of training. This was made by obtaining an assessment of trainees' skills from instructors (who had to rate trainees' skills on a scale, give the course mark a trainee received, and state any future driving problems a trainee may experience), and also from trainees' perceived ability to undertake the driving manoeuvres shown in the video sequences used for the indirect attitude measurement (see chapter 4, section 4.2).

5.42 Instructor Rating of Trainees Skills

Although the course mark of trainees was obtained from instructors, it has not been used to assess trainees' skills as the marking system adopted by police instructors made it impossible for a comparison to be made between the marks obtained for the standard and response phase. This was because trainees who qualified for the response phase were not given a mark after the four week standard phase, but were graded as "satisfactory to undertake the response phase." Despite this problem, an assessment of driving skill can still be made from the instructors' scale rating of trainees' driving skill and their assessment of trainees' future driving problems.

From table 5.41, it can be seen that the vast majority of trainees have been given a positive scoring by instructors in terms of skill, with the majority of trainees scoring two on the seven point skill assessment scale. This majority slightly increases after the extra two week response phase from 72.6% giving a positive score and 41% having a score of two on the seven point scale to 86% and 45% respectively. It can also be seen that only a small minority (10%) of trainees are given a negative skill assessment after the four week standard phase, with nobody having a negative skill assessment after six weeks training.

Table 5.41: Trainee Skill Assessment

Very Good 1 2 3 4 5 6 7 Very Bad				
Scale Values	Standard Phase		Response Phase	
	No	%	No	%
1	6	8.6%	2	6.1%
2	29	41.4%	15	45.5%
3	16	22.9%	12	36.4%
4	12	17.1%	4	12.1%
5	6	8.6%		
6	1	1.4%		

From analysing the mean scores on table 5.42, it can be seen that after each phase of training, the trainees who undertook the extra two week response phase of training have significantly lower mean scores than trainees who only undertook the standard four week phase of training ($p > 0.001$). This finding is to be expected, as only trainees who reach a higher standard in terms of driving skill are allowed to undertake

the extra two week response phase. However, in comparing the skill level of trainees who undertook the extra two weeks response phase of training after the standard phase and after the response phase, it can be seen that no significant increase in the level of skill occurs ($p > 0.05$), with mean scores in-fact slightly increasing. These findings show that whilst the training seems to be effective in teaching driving skills, there seems to be no increase in the level of skill for the extra two week response phase. This is surprising, as this element of training is supposed to teach far more advanced driver training techniques, and an overall increase in the level of skill was therefore expected. However, it is worth noting that as with the instructor attitude assessment (see section 5.17), the lack of increase in skill after the response phase may have been due to instructors being more familiar with their own marking system, and hence having difficulty with the scales used for this element of the research.

Table 5.42: Comparison of the Differences in Mean Scores for Trainee Skill Assessment

Comparison of Mean Scores (T Test)	AFTER 4 WEEKS		AFTER 6 WEEKS		AFTER 4 WEEKS	AFTER 6 WEEKS
	S	R	S	R	R	R
Mean Score	3.38	2.03		2.55	2.03	2.55
Standard Deviation	1.21	0.49		0.83	0.50	0.83
T value	5.71		* 3.56		-3.36	
Degrees of Freedom	68		* 72		28	
2 Tail Probability	0.000		* 0.001		0.116	

Key: S = Standard Phase Only
R = Standard and Response Phase
* = Significance Calculated Using Standard Phase Only Scores After Four Weeks

5.43 Instructors' Assessment of Future Driving Problems

Whilst instructors felt that the majority of trainees would experience no future driving problems after the standard phase (76.1%) and after the response phase (78.8%), they also note that a significant minority will experience future driving problems (23.9% after the standard phase and 21.2% after the response phase). Table 5.43 shows that the majority of future driving problems stated by instructors relate to driving skills that were taught on the course, with instructors thinking very few trainees had attitude problems (This confirms the findings of the instructor assessment of attitudes, section 5.17). These problems could be due to instructors not allocating enough time to instruct each trainee, with trainees who are slower at learning requiring more time driving to successfully learn the techniques taught. Instructors generally have to teach three trainees simultaneously, with each trainee taking turns at driving the vehicle, thus reducing the amount of actual driving time available to each trainee. Some trainees had in-fact highlighted this point to the researcher, and some trainees also stated this problem as one of the bad points of the training course (see section 5.16). These problems may also be due to trainees having reached the peak of their driving ability, rather than the training being ineffective in teaching driving skills.

Table 5.43: Instructor Assessment of Future Driving Problems

Instructor Assessment of Trainee Future Driving Problems	No	%
AFTER STANDARD PHASE (4 WEEKS)		
Concentration/indecision.....	10	58.8%
Confidence.....	3	17.6%
Keeping the system.....	2	11.8%
Lack of appreciation of hazards.....	2	11.8%
Not looking far enough ahead.....	1	5.9%
Tense and nervous.....	1	5.9%
Reached the peak of driving ability.....	3	17.6%
Smooth control of vehicle.....	1	5.9%
Allows speed to dominate.....	1	5.9%
Think they are better than are	1	5.9%
Total.....	17	100.0%
AFTER RESPONSE PHASE (6 WEEKS)		
Concentration/indecision.....	1	14.3%
Lack of appreciation of hazards.....	2	28.6%
Not looking far enough ahead.....	2	28.6%
Tense and nervous.....	1	14.3%
Allows speed to dominate.....	1	14.3%
Poor attitude.....	1	14.3%
Total.....	7	100.0%
NB: Multiple Responses Mean Percentages may not add up to 100%		

5.44 Trainees Perceived Ability to Undertake the Driving Manoeuvres Shown in the Video Sequences

Table 5.44 shows that the vast majority of trainees stated that they would undertake all of the good points (66-86%) and none of the bad points (64-85%) they perceived to be shown in each video sequence observed after the standard phase (videos 1-4) and response phase (video 5) of training. Although a minority of trainees stated they would undertake some of the bad points and would not undertake some of the good points shown in the video sequences, this referred mainly to only a small proportion of the good and bad points stated (1-25%). There are very little differences in the responses of trainees who only undertook the standard phase, and trainees who undertook the standard and response phase of training. As the good and bad points stated by trainees are similar (although less detailed) to those stated by driving 'experts' (see section 5.2), it can be assumed that the majority of trainees perceived they possessed the skills that are required to undertake appropriate driving behaviour in terms of the objectives of the course (see appendix 1).

Table 5.44: Percentage of Perceived Good and Bad Points Observed by Trainees in the Video Sequences That They Would and Would not Undertake in a Similar Situation

Perceived Good and Bad Points	% of Responses in Each Video				
	VIDEO 1	VIDEO 2	VIDEO 3	VIDEO 4	VIDEO 5
GOOD POINTS THEY WOULD UNDERTAKE					
All good points mentioned	78.3%	85.5%	66.7%	71.6%	83.9%
50-75% of the Good Points	13.0%	2.9%	1.4%	25.4%	12.9%
1-25% of the Good Points	1.4%		1.4%	3.0%	3.2%
No good points were mentioned	7.2%	11.6%	30.4%		
BAD POINTS THEY WOULD UNDERTAKE					
All Bad Points				3.0%	9.7%
50-75% of the Bad Points		1.4%		3.0%	
1-25% of the Bad Points	15.9%	13.0%	14.5%	11.9%	
None of the Bad Points	84.1%	85.5%	85.5%	64.2%	41.9%
No Bad Points Were Mentioned				17.9%	48.4

Table 5.45 shows the good points that a minority of trainees would not undertake, and the bad points a minority of trainees would undertake in a similar situation. As only a minority of trainees stated such points, it is not possible to detect any trends in the types of behaviour they would and would not undertake.

Table 5.45: Good Points That Trainees Would Not and Bad Points That Trainees Would Undertake in a Similar Situation

Good and Bad Points	VIDEO 1	VIDEO 2	VIDEO 3	VIDEO 4	VIDEO 5
GOOD POINTS THEY WOULD NOT UNDERTAKE	%	%	%	%	%
Good overtake	30.0%	11.1%	27.3%	42.1%	25.0%
Bend assessment	20.0%	22.2%		5.3%	
Motorway driving	30.0%	33.3%			
Horn warnings	10.0%	11.1%	9.1%	36.8%	
Good pace	10.0%		9.1%	5.3%	
Smooth gear changing	10.0%	11.1%	9.1%	26.3%	
Use of mirror	10.0%	11.1%	18.2%	10.5%	
Use of handbrake		11.1%			
Good following distance		11.1%			25.0%
Easing off power			9.1%		
Steering			9.1%	5.3%	
Appearing confident					
Good acceleration				5.3%	
Good road positioning				15.8%	
Observation/planning				10.5%	
Caution/hazard awareness				5.3%	
Speed/distance (hazards)				5.3%	
Progressive driving				10.5%	
Use of speed				5.3%	
Use of system				10.5%	
Courteous to other users					25.0%
Smooth car control					50.0%
TOTAL	100%(10)	100% (9)	100%(11)	100%(19)	100%(4)
BAD POINTS THEY WOULD UNDERTAKE					
Steering method	27.3%	23.1%			
Lack of use of indicator	9.1%	7.7%		12.5%	
Poor road positioning	27.3%		14.5%	23.1%	
Impatience/stressed	18.2%	15.4%	85.5%		
Poor use of gears	9.1%	30.8%		30.8%	
No mirror checks	9.1%			7.7%	
Poor overtake	9.1%	7.7%		7.7%	100.0%
Excessive speed		15.4%		15.4%	
Lack of horn warnings		7.7%			
Observation/planning		7.7%			
Bad car control		7.7%			
Braking sharp and late		15.4%			
Poor cornering		15.4%			
Crossing hatchings				23.1%	
Head too rigid				7.7%	
On wrong side of road				7.7%	
TOTAL	100% (8)	100%(13)	100%(15)	100%(13)	100%(1)

NB: Multiple Responses Mean Percentages may not add up to 100%

In summary, these findings indicate that the vast majority of trainees perceive they have the ability to undertake the majority of the good points they perceive to be shown in the video sequences.

5.45 Summary of Skill Assessment

Although the training has been found to be effective in teaching the advanced training skills taught on the course (with instructors rating trainees highly in terms of skill, and with trainees perceiving they have the ability to undertake the skills taught on the course), the extra two week response phase does not significantly improve the skill level of trainees. In addition, instructors believed a significant minority of trainees would experience future driving problems in terms of driving skill. The training course whilst developing skills could therefore be improved, especially the extra two week response phase.

5.5 THE STABILITY AND LONGEVITY OF TRAINEES' ATTITUDES

5.51 Introduction

The stability and longevity of trainees' attitudes was undertaken by sending trainees a questionnaire 3-10 months after their standard/response driver training course. This measured trainees' attitudes towards speed, thrill, and excitement, the elements of the course the trainees still used, and the elements of the course they enjoyed or disliked. This was undertaken using a combination of direct and semi-direct questioning (see chapter 4, section 4.4).

72% of the police officers used in the research completed and returned the questionnaire sent to them. These have subsequently been used to analyse the stability and longevity of trainees' attitudes. This response rate was better than expected, and means that the results should be representative of the total population of trainees used in the research.

5.52 The Elements of the Course Trainees Still Applied

From table 5.46, it can be seen that the vast majority of trainees claim to apply each element of the driver training techniques taught on the course during police duty. The majority for each element of the training is strong, ranging from 83-100% of trainees stating that they used each element of the training.

Table 5.47 shows that the majority of trainees apply each element of the driver training techniques taught on the course during their leisure time. However, the size of the majority varies considerably, ranging from 52-94% of trainees for the various elements of the training. Due to the considerable variation in the application of the various elements of the techniques used during leisure time, the elements of the training with similar results will be evaluated in turn, stating possible explanations for the results obtained:

1) Forward Planning/Observation, and Safety Margins

   These techniques were used by the vast majority of trainees (92-94%) during their leisure time. These techniques involve perceptual skills, and are a very important element of safe driving, as they lead to increased anticipation, and the ability to have enough time to react to potential hazards. Trainees may have felt that this technique should therefore be applied at all times.

2) Steering and Gear Techniques

   Although a large majority of trainees apply these techniques during their leisure time (70-76%), there are a large minority of trainees (23-29%) who claim to no longer apply them. These techniques have often been criticised by driving 'experts' outside the police force (for example, Whitmore, 1989, p19-28), and it might be that trainees agree with the criticisms made.

3) The Six Feature System and the Use of Speed

   Only a small majority of trainees apply the six feature system (a drill undertaken by a driver on approach to any potential hazard) and the use of speed (52-60%) with a large minority (40-47%) no longer using these techniques during their leisure time. This may be because:

i) Although not stated in the police driving manual (Roadcraft, 1977, p83), the use of speed as taught by the Essex Police (from observing the training) focuses upon making maximum safe progress in undertaking a journey, hence driving as fast as road conditions and circumstances permit. As there is usually less urgency in making a journey quickly during leisure time, many trainees might feel there is no need to apply the techniques during their leisure time.

ii) The six feature system could have become automatic, so that trainees are no longer consciously aware that they are using the technique (see chapter 3, section 3.42). However, if this were the case, there would not be any variation in the application of the techniques during police duty. An alternative explanation is that they no longer see the benefit of the system, having had the chance to apply it since undertaking the training course. This technique has also been criticised by driving 'experts' within and outside the police force (for example, Amey 1989a, Whitmore, 1989, p6).

Whilst it is suggested that the lack of application of elements of the techniques in leisure time could be due to the criticisms made by driving 'experts' outside the police force, it could also be due to inadequate explanations of the reasons for undertaking the elements of the training. This could explain why some trainees stated this as what they disliked about the course.

A comparison between trainees who only undertook the standard phase, and trainees who undertook standard and the response phase (from table 5.46 and 5.47) shows very little overall difference in the application of the techniques taught. However, slight variations between groups of trainees can be observed. During police duty, slightly more trainees who only undertook the standard phase of training do not apply the techniques, with the differences being more pronounced for the steering technique, gear technique, and use of speed. However, Chi Square (using Yates Correction) revealed that these differences were only significant for the use of speed (chi square = 5.417, degrees of freedom = 1, p = 0.0199). This finding could be due to less need to apply the use of speed as taught by the Essex Police during police duty for trainees who only undertook the standard phase of training, as such trainees are not permitted to undertake pursuit and response calls (see chapter 1, section 1.4). Hence, there is less need to make maximum safe progress in undertaking a journey. During leisure time, the application of the techniques is more varied between trainees with slightly more trainees who only undertook the standard phase of training no longer using the gear technique, and slightly more trainees who undertook the standard and response phase of training not using the six feature system and cornering techniques. However, Chi Square (using Yates Correction) revealed that these differences were not significant ($p > 0.05$).

These findings show that the extra two week response phase has little overall effect on the degree to which training is applied during police duty and leisure time. Although slight differences between groups of trainees did occur, overall these were not significant.

Table 5.46: Elements of Training Applied or not Applied During Police Duty

Elements of Training Applied or not Applied During Police Duty	Standard Phase Only		Standard and Response Phase		Total	
	No	%	No	%	No	%
SIX FEATURE SYSTEM						
I Do Apply	24	85.7%	21	80.8%	45	83.3%
I Don't Apply	4	14.3%	5	19.2%	9	16.7%
STEERING TECHNIQUE						
I Do Apply	24	85.7%	25	96.2%	49	90.7%
I Don't Apply	4	14.3%	1	3.8%	5	9.3%
FORWARD PLANNING/ OBSERVATION TECHNIQUE						
I Do Apply	27	96.4%	26	100.0%	53	98.1%
I Don't Apply	1	3.6%			1	1.9%
CORNERING TECHNIQUES						
I Do Apply	26	92.9%	24	92.3%	50	92.6%
I Don't Apply	2	7.1%	2	7.7%	4	7.4%
GEAR TECHNIQUE						
I Do Apply	21	75.0%	24	92.3%	45	83.3%
I Don't Apply	7	25.0%	2	7.7%	9	16.7%
SAFETY MARGINS						
I Do Apply	28	100.0%	26	100.0%	54	100.0%
I Don't Apply						
USE OF SPEED						
I Do Apply	21	75.0%	26	100.0%	47	87.0%
I Don't Apply	7	25.0%			7	13.0%
TOTAL	28	100.0%	26	100.0%	54	100.0%

Table 5.47: Elements of Training Applied or not Applied During Leisure Time

Elements of Training Applied or not Applied During Leisure Time	Standard Phase Only		Standard and Response Phase		Total	
	No	%	No	%	No	%
SIX FEATURE SYSTEM						
I Do Apply	20	69.0%	13	50.0%	33	60.0%
I Don't Apply	9	31.0%	13	50.0%	22	40.0%
STEERING TECHNIQUE						
I Do Apply	22	75.9%	20	76.9%	42	76.4%
I Don't Apply	7	24.1%	6	23.1%	13	23.6%
FORWARD PLANNING/ OBSERVATION TECHNIQUE						
I Do Apply	28	96.6%	24	92.3%	52	94.5%
I Don't Apply	1	3.4%	2	7.7%	3	5.5%
CORNERING TECHNIQUES						
I Do Apply	23	79.3%	17	65.4%	40	72.7%
I Don't Apply	6	20.7%	9	34.6%	15	27.3%
GEAR TECHNIQUE						
I Do Apply	19	65.5%	20	76.9%	39	70.9%
I Don't Apply	10	34.5%	6	23.1%	16	29.1%
SAFETY MARGINS						
I Do Apply	27	93.1%	24	92.3%	51	92.7%
I Don't Apply	2	6.9%	2	7.7%	4	7.3%
USE OF SPEED						
I Do Apply	15	51.7%	14	53.8%	29	52.7%
I Don't Apply	14	48.3%	12	46.2%	26	47.3%
TOTAL	29	100.0%	26	100.0%	55	100.0%

Table 5.48 and 5.49 show that the number of months since training was undertaken does have an effect on whether trainees apply the techniques taught on the training course. Overall, there were slightly more trainees not applying the techniques taught (during police duty and leisure time) who undertook the course 7-10 months previously than trainees who undertook the training 3-6 months previously. These differences are more pronounced when applying the techniques during police duty, although Chi Square (using Yates Correction) revealed that there were no significant differences in the application of the techniques taught, and the number of months since training was undertaken ($p > 0.05$).

These findings show that the application of some of the techniques taught on the course does deteriorate over time, although this deterioration is not significant. Whilst no drastic changes have occurred over time, it must be noted that the timescale that

was evaluated was relatively short (3-10 months), and no drastic changes would have been expected within this period.

Table 5.48: The Effect of Time on the Elements of Training Applied or not Applied During Police Duty

Elements of Training Applied or not Applied During Police Duty	3-6 Months After Course		7-10 Months After Course		Total	
	No	%	No	%	No	%
SIX FEATURE SYSTEM						
I Do Apply	31	88.6%	14	73.7%	45	83.3%
I Don't Apply	4	11.4%	5	26.3%	9	16.7%
STEERING TECHNIQUE						
I Do Apply	33	94.3%	16	84.2%	49	90.7%
I Don't Apply	2	5.7%	3	15.8%	5	9.3%
FORWARD PLANNING/ OBSERVATION TECHNIQUE						
I Do Apply	35	100.0%	18	94.7%	53	98.1%
I Don't Apply			1	5.3%	1	1.9%
CORNERING TECHNIQUES						
I Do Apply	33	94.3%	17	89.5%	50	92.6%
I Don't Apply	2	5.7%	2	10.5%	4	7.4%
GEAR TECHNIQUE						
I Do Apply	28	80.0%	17	89.5%	45	83.3%
I Don't Apply	7	20.0%	2	10.5%	9	16.7%
SAFETY MARGINS						
I Do Apply	35	100.0%	19	100.0%	54	100.0%
USE OF SPEED						
I Do Apply	33	94.3%	14	73.7%	47	87.0%
I Don't Apply	2	5.7%	5	26.3%	7	13.0%
TOTAL	35	100.0%	19	100.0%	54	100.0%

Table 5.49: The Effect of Time on the Elements of Training Applied or not Applied During Leisure Time

Elements of Training Applied or not Applied During Leisure Time	3-6 Months After Course		7-10 Months After Course		Total	
	No	%	No	%	No	%
SIX FEATURE SYSTEM						
I Do Apply	23	63.9%	10	52.6%	33	60.0%
I Don't Apply	13	36.1%	9	47.4%	22	40.0%
STEERING TECHNIQUE						
I Do Apply	27	75.0%	15	78.9%	42	76.4%
I Don't Apply	9	25.0%	4	21.1%	13	23.6%
FORWARD PLANNING/ OBSERVATION TECHNIQUE						
I Do Apply	34	94.4%	18	94.7%	52	94.5%
I Don't Apply	2	5.6%	1	5.3%	3	5.5%
CORNERING TECHNIQUES						
I Do Apply	25	69.4%	15	78.9%	40	72.7%
I Don't Apply	11	30.6%	4	21.1%	15	27.3%
GEAR TECHNIQUES						
I Do Apply	24	66.7%	15	78.9%	39	70.9%
I Don't Apply	12	33.3%	4	21.1%	16	29.1%
SAFETY MARGINS						
I Do Apply	35	97.2%	16	84.2%	51	92.7%
I Don't Apply	1	2.8%	3	15.8%	4	7.3%
USE OF SPEED						
I Do Apply	21	58.3%	8	42.1%	29	52.7%
I Don't Apply	15	41.7%	11	57.9%	26	47.3%
TOTAL	36	100.0%	19	100.0%	55	100.0%

In summary, it can be seen that although the majority of trainees apply the elements of the training taught on the course during police duty and leisure time, there is a significant minority who do not apply the techniques during their leisure time. Although there could be many reasons why these differences occur, it does seem that trainees' attitudes towards what is being taught on the course change after training. The differences between police duty and leisure time could be explained by the fact that there may be perceived and actual pressure to continue using the technique during police duty from superior officers and peers, whereas during leisure time, a trainee is in a better position to drive according his own attitudes and beliefs, as such driving is generally not seen by other police officers. It is feared that with increasing time, more trainees will no longer apply the techniques during police duty. This is because a trainee who has just undertaken training could believe that their driving is being scrutinised by superiors and peers to a greater degree immediately after training, causing pressure to conform to police ideals. With time, this pressure to conform may

lessen, leading to a decline in the use of the elements of the training. This may explain why the deterioration in the application of the techniques taught affected driving during police duty more than driving during leisure time.

5.53 The Aspects of the Course Trainees Enjoyed or Disliked

From table 5.50, it can be seen that the most frequently mentioned aspects of the training the trainees enjoyed relate to the use of speed and high speed driving, improved skills and abilities, and elements of the driving techniques being taught. There is very little difference in these aspects of the course and the good points of the course, stated at the end of the standard and response phase (see section 5.24). However, there are two notable differences:

1) Trainees did not refer to the standard of tuition as something they enjoyed, but did state earlier that it was a good point of the course.

2) The training on the skid pan was not mentioned as a good point of the training, but is stated by 22% of trainees as an aspect of the course that they enjoyed.

These differences in trainees' positive opinions of the training course could have been due to differences in the wording of the question (that is enjoy as opposed to good). Alternatively, the difference could have been due to trainees realising from driving after the training course what benefit the training had on their driving ability.

In comparing the responses of trainees who only undertook the standard phase with trainees who undertook the standard and response phase, it can be seen that the responses of trainees who only undertook the standard phase are considerably varied, whereas the trainees who also undertook the extra two week response phase tend to focus upon the speed elements of the training, particularly the high speed aspects of the training, and the speed aspects of the extra two weeks of training. Although these differences can also be seen in the good points of the course, stated at the end of the standard and response phase (see section 5.24), there was no such concentration on speed by trainees undertaking the response phase, and the number of comments referring to speed was less. As with the good and bad points of the course, it is felt that this may not be conducive to road safety for those trainees who have an inappropriate attitude towards speed, thrill, and excitement in terms of the objectives of the course (see appendix 1). As it has been found that more of such trainees undertake the extra two week response phase than the standard phase only, such comments may lead to the inappropriate use of speed when driving in response and pursuit situations.

Table 5.51 shows that the most frequently mentioned aspects of the training that trainees disliked relate to feeling pressurised, poor instruction, and elements of the training. There is very little difference between these aspects of the course, and the bad points of the course stated at the end of the standard and response phase. However, most of the comments made on table 5.51 are more specific in their meaning, and hence give a clearer picture of exactly what trainees disliked about the training. The most disturbing element of the results (as with the bad points stated after the standard and response phase) is the pressure felt by trainees and the criticisms of the style of instruction. It is essential that trainees remain calm and relaxed when driving, and not to let personal feelings and emotions affect driving. This is not being experienced by some trainees (approximately 14%) which seems to be exacerbated by the instructors style of instruction (for example, instructors' screaming and shouting at trainees is unlikely to have a calming effect). These aspects of the course that trainees

disliked seem to be felt by approximately the same number of trainees undertaking the standard and response phase of training.

An evaluation of the effect of time on what trainees enjoyed and disliked was undertaken. This discovered that there were no significant differences in responses with time. This may have been due to the small timescale that was used.

Table 5.50: The Aspects of the Training That Trainees Enjoyed Most

Aspects of Training Enjoyed Most	Standard Phase Only		Standard + Response Phase		Total	
	No	%	No	%	No	%
Pursuit and Response Training.			7	28.0%	7	14.0%
Blue light two tone horns.....			5	20.0%	5	10.0%
Day at Boreham.....			13	52.0%	13	26.0%
Skid Pan.....	9	36.0%	2	8.0%	11	22.0%
Gaining extra confidence.....	3	12.0%			3	6.0%
Learning to drive safely.....	2	8.0%	1	4.0%	3	6.0%
Learning to drive correctly...	1	4.0%	2	8.0%	3	6.0%
Driving much faster/to the.... limit on extra two weeks...	1	4.0%	1	4.0%	2	4.0%
Improved my driving skills....	2	8.0%			2	4.0%
Improved me as an officer.....	1	4.0%			1	2.0%
Sense of achievement.....	2	8.0%			2	4.0%
Controlled accurate driving at fast speeds safely.....	2	8.0%	4	16.0%	6	12.0%
Not experiencing thrill and excitement using blue lights			1	4.0%	1	2.0%
Test training track day.....			1	4.0%	1	2.0%
Learned a lot.....	1	4.0%			1	2.0%
Day out trips, eg Mawbray.....			1	4.0%	1	2.0%
Leisure/social aspect.....	1	4.0%			1	2.0%
All of it.....	2	8.0%			2	4.0%
Correct steering technique....	1	4.0%			1	2.0%
Commentary work.....	1	4.0%			1	2.0%
None of it.....	3	12.0%			3	6.0%
Driving a variety of vehicles.	1	4.0%			1	2.0%
Practicing the techniques.....	2	8.0%			2	4.0%
Improved my driving.....	1	4.0%			1	2.0%
Control of the vehicle.....			1	4.0%	1	2.0%
Gaining Experience.....	2	8.0%			2	4.0%
Able to react to others'errors			1	4.0%	1	2.0%
Learning to drive patiently...	1	4.0%			1	2.0%
Observation/Awareness skills..	3	12.0%			3	6.0%
Learning the system.....	1	4.0%			1	2.0%
Overtaking manoeuvres.....	1	4.0%			1	2.0%
Constructive Assessment.....	2	8.0%			2	4.0%
Total.....	25	100%	25	100%	50	100%

NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.51: The Aspects of the Training Trainees Disliked Most

Aspects of Training Disliked Most	Standard Phase Only		Standard + Response Phase		Total	
	No	%	No	%	No	%
Instructors pushing me to my driving limit.....	2	7.4%			2	4.1%
Pressurised/ couldn't relax or drive naturally.....	5	18.5%	2	9.1%	7	14.3%
Nothing.....	6	22.2%	6	27.3%	12	24.5%
Not qualifying for Response...	1	3.7%			1	2.0%
Very tiring/fatigue.....	2	7.4%	1	4.5%	3	6.1%
Impatient instructors/screamed and shouted at you.....	2	7.4%	2	9.1%	4	8.2%
Discovered how bad I was at driving.....	1	3.7%			1	2.0%
Getting no feedback on your performance.....	1	3.7%			1	2.0%
Not enough town driving.....	1	3.7%			1	2.0%
Failing on the last day.....			1	4.5%	1	2.0%
All of it.....	1	3.7%			1	2.0%
Course too long.....	1	3.7%			1	2.0%
Course too short.....	1	3.7%	1	4.5%	2	4.1%
Cross check tests by instructors/pressure.....	1	3.7%	1	4.5%	2	4.1%
Mock pursuit dangerous to us.. and the public.....			1	4.5%	1	2.0%
Boreham day.....			1	4.5%	1	2.0%
Commentary on blue light runs.			1	4.5%	1	2.0%
Other drivers in vehicle being better than you.....	1	3.7%			1	2.0%
The tests.....	2	7.4%	1	4.5%	3	6.1%
High speeds used.....			1	4.5%	1	2.0%
Having your driving demolished and then rebuilt.....			1	4.5%	1	2.0%
Attitude of instructors.....	1	3.7%	1	4.5%	2	4.1%
Lack of explanation given to the reasons for the methods	1	3.7%			1	2.0%
Using outdated techniques to drive modern vehicles.....	1	3.7%			1	2.0%
Manoeuvring at garage.....						
Night Drive.....	1	3.7%			1	2.0%
City run.....	2	7.4%			2	4.1%
Lectures.....			2	9.1%	2	4.1%
Total.....	27	100%	22	100%	49	100%

NB: Multiple Responses Mean Percentages may not add up to 100%

In summary, these findings show that the course may over-emphasise the speed element of the training for those undertaking the response phase, and also exert too much pressure on trainees at both phases of the training, caused primarily by the style of instruction.

5.54 Attitudes Towards Speed, Thrill, Excitement, and What is Taught

In an attempt to maintain the response rate some of the scales used for this element of the research were reworded, and some slightly different scales were also used. This was undertaken as it was felt that if trainees had to answer similarly worded questions to those previously answered, they would not see the point of the exercise and refuse to fill in the questionnaire (see chapter 4, section 4.3). This means that comparisons can strictly only be made with the results obtained during the training course for scales which have not been changed, or where only a slight rewording has occurred (although it must be remembered that slightly different attitudes may be measured with reworded scales). Despite the problems with comparing results, some interesting additional findings have been discovered.

5.55 Attitudes Towards Speed, Thrill, and Excitement

Only one attitude statement measuring the longevity of attitudes towards speed, thrill, and excitement was similarly worded to the statements used to measure these attitudes during the training course ("I enjoy driving at high speeds"). Therefore, a comparison of the degree of change of attitudes towards speed, thrill, and excitement can only be evaluated using one scale. It has been decided to individually evaluate each scale that was used for this element of the research, due to the variety of results that were obtained.

5.55.1 Training Increasing the Ability to Experience Speed and Thrill

Table 5.52 shows that three-ten months after training, only a small minority of trainees believe that training increased their ability to experience thrill and excitement (12.7%). The strength of the positive attitudes that were expressed were moderate, with the majority of trainees possessing positive attitudes scoring two on the seven point scale. The mean scores on table 5.52 show that the vast majority of trainees rate the statement negatively, irrespective of the number of phases of training that they undertook. However, the mean score for trainees who undertook the standard and response phase is significantly lower ($p < 0.01$), meaning that the negative attitudes held by these trainees is to a lesser degree.

Table 5.52: The Rating of the Statement "Police Driver Training has Increased my Ability to Experience Thrill and Excitement"

Ability to Experience Thrill/Excitement	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
Frequency		1	6	7	7	9	25
Percent		1.8%	10.9%	12.7%	12.7%	16.4%	45.5%
Cumulative Percent		1.8%	12.7%	25.5%	38.2%	54.5%	100.0%

T Test	S	R
Mean Score	6.24	5.04
Standard Deviation	1.15	1.64
T value	3.18	
Degrees of Freedom	53	
2 Tail Probability	0.002	

Key
S = Standard Phase Only
R = Standard and Response Phase

5.55.2 The Enjoyment of High Speed Driving

Table 5.53 shows that three-ten months after training, a small majority of trainees (54.5%) enjoy driving at high speeds. The strength of the positive attitudes that were expressed were strong, with the majority of trainees scoring one or two on the seven point scale. The mean scores on table 5.47 show that those who undertook the standard and response phase have slightly lower mean scores, although these differences are not significant ($p > 0.05$).

Table 5.53 The Rating of the Statement "I Enjoy Driving at High Speeds"

I Enjoy Driving at High Speeds	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
Frequency	8	11	11	9	8	7	1
Percent	14.5%	20.0%	20.0%	16.4%	14.5%	12.7%	1.8%
Cumulative Percent	14.5%	34.5%	54.5%	70.9%	85.5%	98.2%	100.0%

T Test	S	R
Mean Score	3.69	3.12
Standard Deviation	1.65	1.71
T value	1.27	
Degrees of Freedom	53	
2 Tail Probability	0.210	

Key
S = Standard Phase Only
R = Standard and Response Phase

The statement "I enjoy driving at high speeds" is similarly worded to the statement "high speed driving is thrilling," which was used to evaluate attitudes towards speed, thrill, and excitement while trainees were undertaking the training course. Although

the meaning of these statements is slightly different, it is assumed that they are being interpreted in a similar manner. Evidence for this assumption is based on the fact that a relatively positive correlation was found between these variables ($r = 0.5115$, $p < 0.01$), but no significant correlation was found between the other attitude statements used in this element of the research (relating to thrill and excitement), and those used during the training course ($r = 0.1\text{-}0.3$, $p > 0.05$). This shows that trainees rate these two statements similarly, implies that their meaning could be interpreted similarly. A comparison was therefore made of the differences between how trainees rated "high speed driving is thrilling" at the beginning of training and how they rated "I enjoy driving at high speeds" 3-10 months after training, the results being shown on table 5.54 and 5.55. Table 5.54 shows that the majority of trainees who only undertook the standard phase of training (51.6%) change towards a more negative rating, with a large minority not changing their rating (20%) and a small minority (27.6%) changing towards a more positive rating. The majority of trainees (50%) who undertook the standard and response phase of training change towards a more positive rating, a small minority do not change their rating (12%), and the majority (50%) change towards a more positive rating. Table 5.55 shows that more trainees change towards a positive rating of the statement 3-6 months after training, whereas more change towards a negative rating 7-10 months after training.

Table 5.54: The Degree of Change for the Different Phases of Training Since the Beginning of Training in the Rating of the Statements "High Speed Driving is Thrilling, and "I Enjoy Driving at High Speeds"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement							
	-3	-2	-1	0	1	2	3	4
STANDARD PHASE ONLY								
Frequency	2	4	2	6	9	4	1	1
Percent	6.9%	13.8%	6.9%	20.7%	31.0%	13.8%	3.4%	3.4%
STANDARD AND RESPONSE PHASE								
Frequency		3	9	3	4	3	2	
Percent		12.5%	37.5%	12.5%	16.7%	12.5%	8.3%	

Table 5.55: The Degree of Change Over Time Since the Beginning of Training in the Rating of the Statements "High Speed Driving is Thrilling, and "I Enjoy Driving at High Speeds"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement							
	-3	-2	-1	0	1	2	3	4
3-6 MONTHS AFTER TRAINING								
Frequency	2	5	9	6	6	6	1	
Percent	5.7%	14.3%	25.7%	17.1%	17.1%	17.1%	2.9%	
7-10 MONTHS AFTER TRAINING								
Frequency		2	2	3	7	1	2	1
Percent		11.1%	11.1%	16.7%	38.9%	5.6%	11.1%	5.6%

These findings show that in terms of the objectives of the course (see appendix 1), a large number of trainees' attitudes towards speed and thrill become more inappropriate with time, and that this affects trainees who undertook the standard and response phase of training to a greater degree. In addition, these findings also show that there is a greater change towards a more appropriate attitude towards speed and thrill the longer the period since training was undertaken. This could be due to trainees learning by driving experience, or could also be possibly due to a tapering off of the adverse effects training seems to have on attitudes towards speed, thrill, and excitement (see section 5.1). However, although changes in attitudes have occurred since training, overall the changes are small, with no significant differences in mean scores occurring ($p > 0.05$). Despite this fact, the results are significant in that change has occurred, and the trainees who have experienced a change towards a more inappropriate attitude could become involved in accidents in the future if such an attitude affects their driving performance.

5.55.3 Experiencing a Thrill From Taking Risks When Driving

From table 5.56, it can be seen that only a small minority of trainees (12.7%) experience a thrill from taking risks when driving. The strength of the positive attitudes that were expressed was weak, with the majority of trainees possessing positive attitudes scoring three on the seven point scale. In comparison, the strength of the negative attitudes that was expressed were very strong, with the majority of trainees scoring seven on the seven point scale. The mean scores on table 5.56 show that there are virtually no differences between the trainees undertaking different phases of the training ($p > 0.05$).

Table 5.56 The Rating of the Statement "I Experience a Thrill From Taking Risks When Driving"

Experiencing a Thrill From Taking Risks When Driving	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
Frequency		1	6	2	12	12	22
Percent		1.8%	10.9%	3.6%	21.8%	21.8%	40.0%
Cumulative Percent		1.8%	12.7%	16.4%	38.2%	60.0%	100.0%

T Test	S	R
Mean Score	5.83	5.58
Standard Deviation	1.34	1.50
T value	0.65	
Degrees of Freedom	53	
2 Tail Probability	0.515	

Key
S = Standard Phase Only
R = Standard and Response Phase

5.55.4 The Importance of High Speed Driving

Table 5.57 shows that a large minority of trainees believe that to be thought of as a high speed skilful driver is important to them. The strength of the positive attitudes that were expressed were weak, with the majority of trainees scoring three on the seven point scale. The mean scores on table 5.57 show that those who undertake the standard and response phase of training have significantly lower mean scores ($p < 0.05$). This finding shows that more trainees who undertake the standard and response phase believe that to be thought of as a high speed skilful driver is important to them. These differences may be caused by the fact that trainees that undertake the standard and response phase have done very well on the standard phase, and are proud of this. Driving is therefore more important to them. In addition, these differences could have been caused by the training, or perhaps could have existed at the beginning of training.

Table 5.57 The Rating of the Statement "To be Thought of as a High Speed Skilful Driver is Important to me"

Thought of as a High Speed Skilful Driver	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
Frequency	2	5	11	7	11	9	9
Percent	3.7%	9.3%	20.4%	13.0%	20.4%	16.7%	16.7%
Cumulative Percent	3.7%	13.0%	33.3%	46.3%	66.7%	83.3%	100.0%

T Test	S	R
Mean Score	5.07	3.96
Standard Deviation	1.51	1.82
T value	2.44	
Degrees of Freedom	52	
2 Tail Probability	0.018	

Key
S = Standard Phase Only
R = Standard and Response Phase

In viewing these overall results in relation to the attitudes towards speed, thrill, and excitement already obtained from the direct, semi-direct, and indirect attitude measurement (see sections 5.1, 5.2, and 5.3), a number of points can be made:

1) The majority of trainees find high speed driving thrilling (see section 5.11), and also enjoy high speed driving (see section 5.552) As the majority of trainees enjoy the thrill of high speed driving, it is probable that in the future they will drive fast to enjoy the experience of thrill and excitement. In terms of the objectives of the course (see appendix 1), this is an inappropriate attitude towards high speed driving, as the training course is supposed to develop a calm attitude towards such driving).

2) Although the majority of trainees may experience a thrill from high speed driving, they do not believe that the thrill is experienced when taking risks during driving (see section 5.553). Whilst this shows trainees have a positive attitude towards road safety, it also shows that they are not aware of the risks involved with experiencing thrill in their driving performance and their ability to cope with the situations they are driving to (for example, road traffic accidents).

In summary, the majority of trainees maintain a positive attitude towards speed, thrill, and excitement after training. The majority of trainees who undertook the standard and response phase of training slightly change towards a more positive attitude after training.

5.56 Attitudes Towards What is Being Taught

From table 5.58-5.61, it can be seen that the vast majority of trainees had a positive attitude towards what was taught on the training course, with the number of trainees possessing positive attitudes being large on all scales, ranging from 78-98% of the sample. The strength of the positive attitudes is strong, with the majority scoring one or two on the seven point scale. An analysis of the mean scores was undertaken, but revealed no significant differences in the scores of trainees undertaking the standard

phase only, and trainees undertaking the standard and response phase of training ($p > 0.05$).

Table 5.58: The Rating of the Statement "Standard Police Driver Training has Enabled me to Skilfully Control a Vehicle"

Training Enabling me to Skilfully Control a Vehicle	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
Frequency	10	30	14		1		
Percent	18.2%	54.5%	25.5%		1.8%		
Cumulative Percent	18.2%	72.7%	98.2%	98.2%	100.0%		

Table 5.59: The Rating of the Statement "The Driver Training I Have Undertaken has Improved my Overall Driving Ability"

Driver Training has Improved my Overall Driving Ability	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
Frequency	28	19	6	1	1		
Percent	50.9%	34.5%	10.9%	1.8%	1.8%		
Cumulative Percent	50.9%	85.5%	96.4%	98.2%	100.0%		

Table 5.60: The Rating of the Statement "Roadcraft Should be Complied to at all Times"

Roadcraft Should be Complied to at all Times	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
Frequency	12	16	15	7	4		1
Percent	21.8%	29.1%	27.3%	12.7%	7.3%		1.8%
Cumulative Percent	21.8%	50.9%	78.2%	90.9%	98.2%	98.2%	100.0%

Table 5.61: The Rating of the Statement "Police Driver Training Courses will Improve Road Safety if Undertaken by all Drivers"

Police Driver Training Improving Road Safety	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
Frequency	35	7	7	2	1	2	1
Total	63.6%	12.7%	12.7%	3.6%	1.8%	3.6%	1.8%
Cumulative Percent	63.6%	76.4%	89.1%	92.7%	94.5%	98.2%	100.0%

In comparing degree of change in the rating of the scales used in this element of the research with identical scales used at the beginning of training, it can be seen that the strength of attitudes decreases over time. Table 5.62 shows that the majority of trainees (58-60%) slightly change (generally by one point) to a more negative attitude towards what is being taught on the course. This shows that there has been a change since the end of training as then there was only a large minority of trainees (34-43%) having changed towards a more negative attitude to what is being taught (see section 5.12). As at the end of training, this seems to affect to a greater degree trainees who only undertook the standard phase of training (see section 5.12). Table 5.63 shows that there were no significant differences in the rating of scales between trainees completing the questionnaire 3-6 months and 7-10 months after training. This may have been due to the small timescale that was evaluated.

Table 5.62: The Degree of Change Since the Beginning of Training in the Rating of the Statement "Standard Police Driver Training has Enabled me to Skilfully Control a Vehicle"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement						
	-3	-2	-1	0	1	2	4
STANDARD PHASE ONLY Frequency Percent			1 3.4%	6 20.7%	17 58.6%	4 13.8%	1 3.4%
STANDARD AND RESPONSE PHASE Frequency Percent			3 12.5%	11 45.8%	9 37.5%	1 4.2%	

Table 5.63: The Degree of Change Since the Beginning of Training in the Rating of the Statement "Roadcraft Should be Complied to at all Times"

Attitude Change	- = Changing to Agreeing With the Statement + = Changing to Disagreeing With the Statement						
	-3	-2	-1	0	1	2	3
STANDARD PHASE ONLY							
Frequency			1	10	9	4	5
Percent			3.4%	34.5%	31.0%	13.8%	17.2%
STANDARD AND RESPONSE PHASE							
Frequency	1	1		7	10	3	2
Percent	4.2%	4.2%		29.2%	41.7%	12.5%	8.3%

Table 5.64 and 5.65 shows that comparison of the mean scores for the scales used in this element of the research with identical scales used at the beginning of training reveals significant differences in mean scores ($p < 0.001$-0.01) indicating a decline since training in attitudes towards what is being taught. This decline occurs irrespective of the number of phases of training undertaken, or whether trainees rated the scales used for this element of the research three-six months or seven-ten months after training. Thus, although positive attitudes are maintained, the strength of these attitudes significantly deteriorates over time.

In summary, whilst strong positive attitudes towards what was being taught on the course were discovered, these have significantly deteriorated since the end of training, with this deterioration affecting all trainees.

Table 5.64: Comparison of the Difference in Mean Scores for the Rating of the Statement "Standard Police Driver Training has Enabled me to Skilfully Control a Vehicle"

Comparison of Mean Scores (T Tests)		Mean	Std Dev	T Value	Degrees of Freedom	2 Tail Prob
Trainees who Only Undertook the Standard Phase	B	1.34	0.55	-5.74	28	0.000
	A	2.31	0.81			
Trainees who Undertook the Standard and Response Phase	B	1.63	0.71	-2.14	23	0.043
	A	1.96	0.69			
3-6 months Since Training was Undertaken	B	1.49	0.61	-5.11	34	0.000
	A_1	2.09	0.70			
7-10 Months Since Training was Undertaken	B	1.44	0.71	-2.95	17	0.009
	A_2	2.28	0.90			
All Trainees	B	1.47	0.64	-5.53	52	0.000
	A	2.15	0.77			

Key: B = Rating of the Scale at the Beginning of Training
A = Rating of the Scale Between 3-10 Months After Training
A_1 = Rating of the Scale Between 3-6 Months After Training
A_2 = Rating of the Scale Between 7-10 Months After Training

Table 5.65: Comparison of the Difference in Mean Scores for the Rating of the Statement "Roadcraft Should be Complied to at all Times"

Comparison of Mean Scores (T Tests)		Mean	Std Dev	T Value	Degrees of Freedom	2 Tail Prob
Trainees who Only Undertook the Standard Phase	B	1.55	0.69	-4.95	28	0.000
	A	2.62	1.32			
Trainees who Undertook the Standard and Response Phase	B	2.04	1.27	-2.60	23	0.016
	A	2.75	1.33			
3-6 months Since Training was Undertaken	B	1.80	1.10	-3.64	34	0.001
	A_1	2.60	1.20			
7-10 Months Since Training was Undertaken	B	1.72	0.90	-4.16	17	0.001
	A_2	2.83	1.54			
All Trainees	B	1.77	1.01	-5.30	52	0.000
	A	2.68	1.31			

Key: B = Rating of the Scale at the Beginning of Training
A = Rating of the Scale Between 3-10 Months After Training
A_1 = Rating of the Scale Between 3-6 Months After Training
A_2 = Rating of the Scale Between 7-10 Months After Training

5.57 Summary of the Stability and Longevity of Attitudes

The results have discovered that attitudes towards what is being taught deteriorate over time. This is reflected in the rating of the scales, and also the stated application of the techniques. Attitudes towards speed, thrill, and excitement remain fairly stable over time, although more positive attitudes seem to be expressed by trainees who undertook the standard and response phase of training.

5.6 MAIN RESEARCH FINDINGS OF INSTRUCTOR RESEARCH

5.61 Introduction

The driving instructor research aimed to discover the importance of instructors' behaviour on trainees' attitudes and whether the instructors' behaviour emphasised appropriate attitudes towards driving in terms of the objectives of the course (see appendix 1). The research was undertaken by asking instructors to complete a questionnaire. In addition, trainees were asked on the questionnaire used to directly and semi-directly measure trainees' attitudes if they aspired to drive in a manner similar to their instructors, and give their reasons why they did or did not have such aspiration (see chapter 4, section 4.4).

60% of the police driving instructors who were given questionnaires completed and returned them. This response rate was worse than expected, but should still enable the results to be fairly representative of the total population of instructors. As the questionnaires filled in by driver trainees were administered by the researcher during the training course, a 100% response rate was achieved.

5.62 Aspirations to Drive Like Instructors

The vast majority of trainees do aspire to drive like instructors. This majority slightly increases after the 4 week standard phase of training from 89.7%-95.7% of trainees stating they aspired to drive like instructors. The vast majority of instructors (73.7%) believed that most students aspired to behave while driving in a manner similar to themselves.

From table 5.66, it can be seen that the majority of trainees who aspire to drive like instructors state that this is because they are safe, skilful, and experienced drivers, and these reasons are stated at the beginning and after the standard phase of training. Table 5.67 shows that trainees who do not aspire to drive like instructors have varied reasons for lacking such aspirations. with no general trend in responses before and after the standard phase of training. These results are to be expected due to the small number of trainees stating such reasons.

Table 5.68 shows that the majority of instructors who believe that most students aspire to drive like them state that this is because they are seen as experts, set a good attitude and example, and drive in the manner required to do well on the course. Table 5.68 also shows that the majority of instructors who do not believe that most students aspire to drive like them state that this is because they behave to their own character traits, or are apathetic towards the driving technique taught on the course.

The reasons given by trainees and instructors for aspiring to drive like instructors generally seem appropriate in terms of road safety, emphasising the safety, skill, and good attitude (stated by instructors only) shown by their behaviour. The reasons given by instructors for negative aspirations generally relate to inappropriate attitudes towards road safety. However, this is only felt by a small minority of instructors (26.3%).

The results show that aspiring to drive like instructors is important to the trainees, and that this is recognised by both trainees and instructors. It seems that instructors do act as role models for trainees and could therefore play an important part in developing their attitudes. In addition, the results stress the importance of instructor behaviour in determining attitudes. It is therefore very important for instructors to always display appropriate attitudes towards road safety in their style of instruction, and in their

informal conversations with trainees. For example, instructors should never glamorise, and emphasise the speed and excitement elements of high speed chases they or their colleagues have been involved in, as this may be perceived as approval of this behaviour, and attempts may therefore be made to copy such behaviour by aspiring trainees.

Table 5.66: Why Trainees Aspire to Drive Like Instructors

Reasons why Trainees do Aspire	No	%
AT BEGINNING OF TRAINING		
Smooth/relaxed journey.....	9	14.5%
Skilful/capable/expert.....	20	32.3%
Confident/calm/controlled.....	17	27.4%
Practice the system.....	4	6.5%
For safety.....	30	48.4%
More aware of what is happening on the road.....	6	9.7%
Their qualities will benefit my driving.	3	4.8%
Experienced driver.....	10	16.1%
Looks professional.....	3	4.8%
Drive the way all drivers should.....	6	9.7%
Portray a good image of the police and set a good example.....	2	3.2%
Self satisfaction/pride in ability to drive.....	2	3.2%
He gives the marks.....	1	1.6%
Total.....	62	100.0%
AFTER STANDARD PHASE		
Smooth /relaxed journey.....	9	13.8%
Skilful/capable/expert.....	18	27.7%
Confident/calm/controlled.....	12	18.5%
Practice the system.....	16	24.6%
For safety.....	30	46.2%
More aware of what is happening on the road.....		
Their qualities will benefit my driving.	2	3.1%
Experienced driver.....	1	1.5%
Do not wish to revert to my original standard.....	2	3.1%
Looks professional.....	10	15.4%
Portray a good image of the police and set a good example.....	9	13.8%
Total.....	65	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.67: Why Trainees do not Aspire to Drive Like Instructors

Reasons why Trainees do not Aspire	No	%
AT BEGINNING OF TRAINING		
My bad habits will be hard to change.. .	1	16.7%
Aspire to Roadcraft rather than instructors.....	1	16.7%
No desire to instruct and thus do not require same standard.....	1	16.7%
Want to drive to the best of my ability	1	16.7%
Too mechanical style.....	1	16.7%
Driving is not an important part of my job.....	1	16.7%
Total.....	6	100.0%
AFTER STANDARD PHASE		
Aspire to Roadcraft rather than instructors.....	1	33.3%
Want to drive to the best of my ability.	1	33.3%
Driving is not an important part of my job.....	1	33.3%
Total.....	3	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.68: Why Instructors Believe Most students Aspire or do not Aspire to Behave While Driving in a Manner Similar to Themselves

Instructors Responses	No	%
WHY THEY DO ASPIRE		
They see the instructor as the expert and try to emulate him.....	4	28.6%
Enhance their status.....	2	14.3%
They drive in the manner demanded to do well on the course.....	3	21.4%
I set a good attitude and example.....	2	14.3%
Peer pressure.....	1	7.1%
Take pride in their driving.....	1	7.1%
They try to impress you.....	1	7.1%
Total.....	14	100.0%
WHY THEY DO NOT ASPIRE		
People behave to their own character traits.....	3	50.0%
Apathy with their driving techniques enhanced by co-workers.....	2	33.3%
Try to drive to the best of their ability.....	1	16.7%
Total.....	6	100.0%
NB: Multiple Responses Mean Percentages may not add up to 100%		

5.63 The Major Things the Standard/Response Training Programme is Trying to Achieve

From table 5.69 it can be seen that the most popular things the training programme is trying to achieve relate to the teaching of skills on the extra two week response phase, with far fewer instructors emphasising the skills taught on the first four week standard phase of training. For example, 47% of instructors stated "safe and alert at high speeds to cope with emergency calls" (a major element of the response phase of training), yet only 10.5% stated "good observation and planning" (a major element of the standard phase of training) as one of the major things the Standard/Response training programme is trying to achieve. This seems strange as the standard phase of the training programme is taught for two thirds of the course. It can also be seen from table 5.69 that few instructors (10.5%) state that the training programme is trying to develop appropriate attitudes towards road safety. It seems that the driving instructors may not have taken into consideration the recommendations for police driver training made by the traffic committee of the Association of Chief Police Officers (ACPO, 1989) which emphasised the need to introduce attitude and belief systems training. However, it could be argued that some statements made by instructors could refer indirectly to the attitude development of trainees (for example, "safe systematic driving").

Table 5.69: What Instructors Feel are the Major Things the Standard/Response Driver Training Programme is Trying to Achieve

Instructors Responses	No	%
Safe and alert at high speeds to cope with emergency calls.....	9	47.4%
Exercise restraint and arrive at an incident safely.....	5	26.3%
Remain calm when under pressure.....	6	31.6%
Good observation and planning.....	2	10.5%
Set a good example to the public.....	3	15.8%
Safe systematic driving.....	7	36.8%
To shape good attitudes towards driving.....	2	10.5%
Good attitude to driving at high speeds.....	2	10.5%
Realise the capabilities of various vehicles..	1	5.3%
Consideration/Anticipation of other road users	3	15.8%
Full control of him/herself.....	2	10.5%
Make police drivers experts.....	2	10.5%
Awareness of limitations at any time.....	2	10.5%
Set an example to younger members of the force	1	5.3%
Respond to demands of police driving.....	2	10.5%
The mobility of officers without sufficient training.....	1	5.3%
Trying to achieve the impossible.....	1	5.3%
Response- its dangers and pitfalls.....	1	5.3%
Body and mind reaction to the thrill of a chase.....	1	5.3%
Knowledge of the highway code and the theory of driving.....	1	5.3%
Total.....	19	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

Table 5.70 shows that when instructors were asked to rate the importance of five elements of the training course, the vast majority rated four of the five scales highly, with 73.7-100% of instructors scoring between one and three on the seven point scales. The highest rating was given to "appropriate attitude development." "High speed driving" was rated lower by instructors with only a small majority (52.6%) rating it positively. The lower rating of "high speed driving" may be explained by the fact that high speed driving, although a major element of the response phase of training, is not the primary purpose of the entire course.

Table 5.70: Instructors Rating of the Importance of the Following for the Standard/Response Driver Training Programme:

Rating Scales Used	Very Important 1 2 3 4 5 6 7 Unimportant						
	1	2	3	4	5	6	7
HIGH SPEED DRIVING							
Frequency		5	5	2	5	2	
Percent		26.3%	26.3%	10.5%	26.3%	10.5%	
Cumulative Percent		26.3%	52.6%	63.2%	89.5%	100.0%	100.0%
RAPID ASSISTANCE IN AN EMERGENCY							
Frequency	10	4		5			
Percent	52.6%	21.1%		26.3%			
Cumulative Percent	52.6%	73.7%	73.7%	100.0%	100.0%	100.0%	100.0%
HIGH SKILL CAR CONTROL							
Frequency	1	2	4	4	7	12	3
Percent	3.0%	6.1%	12.1%	12.1%	21.2%	36.4%	9.1%
Cumulative Percent	3.0%	9.1%	21.2%	33.3%	54.5%	90.9%	100.0%
APPROPRIATE ATTITUDE							
Frequency	16	3					
Percent	84.2%	15.8%					
Cumulative Percent	84.2%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
6 FEATURE SYSTEM							
Frequency	6	7	4	1		1	
Percent	31.6%	36.8%	21.1%	5.3%		5.3%	
Cumulative Percent	31.6%	68.4%	89.5%	94.7%	94.7%	100.0%	100.0%

These findings show that there are fundamental differences in instructors' responses when asked openly, and when directly asked about specific elements of the course. When asked openly, the response phase of the course is emphasised, with less consideration given to the standard phase of the course or attitude development, which is supposed to be emphasised throughout the course (although may have been emphasised indirectly in some of the statements made by instructors). However when asked directly about specific elements of the course, equal emphasis is placed on every element except "high speed driving" with "appropriate attitude development" given the strongest emphasis. It seems that instructors' have their own beliefs as to what the Standard/Response course is trying to achieve, and are only reminded of the 'official' aims of the course when asked directly about specific elements of the course content, hence giving the contradictory results shown in tables 5.69 and 5.70.

On the basis that table 5.69 represents instructors' actual beliefs, it seems that instructors may place too much emphasis on the skills taught during the response phase of the training, as the majority of things the instructors feel the training programme is trying to achieve relate to the skills taught on this phase. If this affects instructors' behaviour, then it could cause problems in the way instructors are

perceived and how they instruct. For example, it may be the cause of some of the pressure experienced by trainees who undertake the course (stated by trainees on table 5.27 and 5.51), as they feel that the only important part of the course is the extra two week response phase. It also may cause instructors to experience apathy during the first four week standard phase of training which may perhaps cause a decline in the standard of tuition. Whether this does cause such problems however is unknown.

The findings also show that whilst the course officially is aimed at teaching safe driving skills and attitudes, much less emphasis is placed on attitudes by instructors (although attitudes may have been emphasised indirectly in some of the statements made by instructors). It is therefore not surprising that little change in attitudes towards driving was discovered by the direct and semi-direct assessment of trainees attitudes at different stages of the course.

5.64 Assessment of Instructors' Attitudes

5.64.1 General Attitude Towards Speed and Thrill

Table 5.71 shows that the majority of instructors (57.9%) believe that high speed driving is thrilling, and a large minority (31.6%) believe that driving with flashing blue lights is exciting. The strength of positive and negative attitudes expressed by instructors were moderate, with the majority of individuals possessing positive attitudes scoring two or three on the seven point scale, and the majority of individuals possessing neutral or negative attitudes scoring four or five on the scale.

An analysis was undertaken of the differences between the instructors' mean scores and the mean scores of trainees. This can be seen on table 5.72. The analysis discovered that there were no significant differences between the scores of the instructors and the trainees who only undertook the standard phase of the course ($p > 0.05$). However, instructors' scores were significantly higher ($p < 0.05$) than trainees who stayed for the extra two week response phase for one of the scales used ("driving with flashing blue lights is exciting") both at the beginning and after each phase of training.

By possessing inappropriate attitudes towards speed, thrill, and excitement in terms of the objectives of the course (see appendix 1), the majority of instructors may display such attitudes in their behaviour. This may affect the way the use of speed taught and perceived. As the vast majority of trainees aspire to drive like instructors, then it is not surprising that the majority of trainees possess similar attitudes towards speed, thrill, and excitement as instructors. However these findings suggest that it is not only the behaviour of the instructors that affect the attitudes towards speed and thrill of trainees undertaking the response phase of the course. Rather it is more likely that this is caused by attitudes possessed before the course commenced, which are reinforced by the response phase of training, with the instructors' attitudes doing nothing to counteract this attitude development.

5.64.2 Attitudes Towards What is Being Taught

From table 5.71, it can be seen that virtually all instructors had positive attitudes towards what is being taught, with the number of instructors possessing positive attitudes being large on all sales, ranging from 68.4%-100%. The strength of the positive attitudes that were expressed were strong (with the majority of trainees possessing positive attitudes scoring one or two on the seven point scale). There were no negative attitudes expressed by instructors.

An analysis was undertaken of the differences between the instructors' mean scores and the mean scores of trainees. This can be seen on table 5.73. The analysis discovered that there were no significant differences between the scores of the instructors and the trainees for the scoring of "driver training has enabled me to skilfully control a vehicle" ($p > 0.05$). However, the scoring of the statement "roadcraft should be complied to at all times" was significantly higher for instructors ($p < 0.05$), both at the beginning, and after each phase of training. This meant that instructors possessed this belief to a lesser degree. This may have been due to the fact that instructors are more aware of the flexibility of Roadcraft, and due to their experience have more knowledge of some circumstances where it should not be complied to.

Table 5.71: Assessment of Instructors' Attitudes

Rating Scales Used	Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree						
	1	2	3	4	5	6	7
DRIVING WITH FLASHING BLUE LIGHTS IS EXCITING							
Frequency		1	5	5	4	2	2
Percent		5.3%	26.3%	26.3%	21.1%	10.5%	10.5%
Cumulative Percent		5.3%	31.6%	57.9%	78.9%	89.5%	100.0%
HIGH SPEED DRIVING IS THRILLING							
Frequency	1	5	5	5	2		1
Percent	5.3%	26.3%	26.3%	26.3%	10.5%		5.3%
Cumulative Percent	5.3%	31.6%	57.9%	84.2%	94.7%		100.0%
DRIVER TRAINING HAS ENABLED ME TO SKILFULLY CONTROL A VEHICLE							
Frequency	13	4	2				
Percent	68.4%	21.1%	10.5%				
Cumulative Percent	68.4%	89.5%	100.0%	100.0%	100.0%	100.0%	100.0%
ROADCRAFT SHOULD BE COMPLIED TO AT ALL TIMES							
Frequency	4	3	6	6			
Percent	21.1%	15.8%	31.6	31.6			
Cumulative Percent	21.1%	36.8%	68.4%	100.0%	100.0%	100.0%	100.0%

Table 5.72: Comparison of the Difference Between Instructors and Trainees Mean Scores for the Rating of Attitudes Towards Speed, Thrill, and Excitement

DRIVING WITH FLASHING BLUE LIGHTS IS EXCITING						
T Test	I	S1	S2	R1	R2	R3
Mean Score	4.37	4.23	4.29	3.52	3.48	3.18
Standard Deviation	1.42	1.73	1.58	1.39	1.39	1.24
T value		-0.31	-0.18	-2.09	-2.17	-3.15
Degrees of Freedom		57	55	48	48	50
2 Tail Probability		0.755	0.855	0.042	0.035	0.003
HIGH SPEED DRIVING IS THRILLING						
T Test	I	S1	S2	R1	R2	R3
Mean Score	3.32	3.50	3.71	3.19	3.38	3.18
Standard Deviation	1.42	1.95	1.97	1.64	1.36	0.983
T value		0.37	0.78	-0.27	0.18	-0.24
Degrees of Freedom		57	55	48	48	50
2 Tail Probability		0.714	0.441	0.789	0.860	0.808

Key: I = Driving Instructors
S1-S2 = Scores at the Beginning (S1) and at the end of Training (S2) for Trainees who Only Undertook the Standard Phase
R1-R3 = Scores at the Beginning (R1), After 4 Weeks, (R2) and at the end of Training (R3) for Trainees who Undertook the Standard and Response Phase

Table 5.73: Comparison of the Difference Between Instructors and Trainees Mean Scores for the Rating of Attitudes Towards What is Being Taught

POLICE DRIVER TRAINING HAS ENABLED ME TO SKILFULLY CONTROL A VEHICLE						
T Test	I	S1	S2	R1	R2	R3
Mean Score	1.42	1.45	1.92	1.67	1.87	1.76
Standard Deviation	0.692	0.597	0.94	0.83	0.957	0.66
T value		0.17	2.05	1.12	1.78	1.73
Degrees of Freedom		57	55	48	48	50
2 Tail Probability		0.869	0.045	0.267	0.081	0.089
ROADCRAFT SHOULD BE COMPLIED TO AT ALL TIMES						
T Test	I	S1	S2	R1	R2	R3
Mean Score	2.74	1.65	2.00	2.00	2.00	2.18
Standard Deviation	1.15	0.70	1.29	1.18	0.78	0.98
T value		-4.50	-2.10	-2.16	-2.71	-1.84
Degrees of Freedom		57	55	48	48	50
2 Tail Probability		0.000	0.040	0.036	0.009	0.071

Key: I = Driving Instructors
S1-S2 = Scores at the Beginning (S1) and at the end of Training (S2) for Trainees who Only Undertook the Standard Phase
R1-R3 = Scores at the Beginning (R1), After 4 Weeks, (R2) at at the end of Training (R3) for Trainees who Undertook the Standard and Response Phase

5.65 Summary of Instructor Research

Instructors were found to act as role models for trainees, aspiring to drive to their standard. However, the majority of instructors perhaps inadvertently over-emphasized speed by placing too much emphasis on the skills taught on the response phase of the training (which to a large extent involved the use of speed), and by possessing inappropriate attitudes towards speed, thrill, and excitement in terms of the objectives of the course (see appendix 1). It could be that this over-emphasis displayed by instructors is then copied by trainees.

Whilst the course officially is aimed at teaching safe driving skills and attitudes, much less emphasis is placed on attitudes by instructors. It is therefore not surprising that little change in trainees attitudes towards driving was discovered at different stages of the course.

5.7 RECRUITMENT POLICY RESEARCH

5.71 Introduction

The recruitment policy research aimed to assess the extent to which recruitment policy leads to the recruitment of police officers who possess inappropriate attitudes towards driving. This was undertaken by analysing the recruitment literature available, and also by sending a questionnaire to recruitment officers that aimed to discover whether positive attitudes towards speed, thrill, and excitement enhances recruitment into the police force (see chapter 4, section 4.5).

5.72 Analysis of Recruitment Literature

The recruitment literature of seven police forces (Essex, Kent, Greater Manchester, Thames Valley, South Wales, Lothian and Borders, and Bedfordshire Police) that is given to potential applicants to be police constables was analysed. In addition, the Accelerated Promotion Scheme recruitment literature offered by most police forces to graduates was also analysed.

On analysis of the recruitment literature, it seems that there is no information that would attract applicants with inappropriate attitudes towards driving, or also inappropriate attitudes towards the work of the police in general. Employment in the police force is emphasised as being a career with considerable variety in the tasks to be undertaken each day, offering those who join satisfying, interesting, challenging, and worthwhile work. In terms of attracting people to apply to the police force, the literature seems to be effective as such aspects of police work were emphasised by trainees who undertook the driving course as reasons for joining the police force (see table 5.20). The recruitment literature also emphasises the qualities required to be police officers, entry requirements, and details of salary and hours of work.

In summary, it does not seem that any emphasis is placed on attitudes that may cause unsafe driving by the recruitment literature. The recruitment literature therefore does not cause individuals with inappropriate attitudes to be attracted to the police force.

5.73 Results of Questionnaires Sent to Recruitment Officers

Only 24% (12) of questionnaires sent to recruitment officers were returned for analysis. However, despite the low response rate, some useful insights into recruitment policy have been obtained.

5.73.1 The Ideal Type of Person the Police Force is Trying to Recruit

From table 5.74, it can be seen that there is a wide variety of qualities that recruitment officers believe new recruits into the police force should possess. The variety of qualities required is perhaps due to the wide variety of work a police officer has to undertake (see analysis of recruitment literature). The qualities stated do not appear to be related to inappropriate attitudes towards driving (in terms of the objectives of the course, see appendix 1), and some qualities could be argued to be related to appropriate attitudes towards driving; for example, maturity, concern for the well being of society, common sense, and security.

The vast majority of recruitment officers (91.7%) stated that the recruitment literature available attracted the ideal type of person to apply to join the police force. Only one recruitment officer believed the recruitment literature did not attract the ideal type of person, and stated that this was because the national leaflet was very poor. This leaflet

only gives a general description of the police force and the qualities required. However, police forces generally give a comprehensive brochure in addition to this leaflet which compensates for these inadequacies.

In summary, it would seem that in terms of the objectives of the Standard/Response course of the Essex Police (see appendix 1), the qualities sought from new recruits joining the police force are not associated with inappropriate attitudes towards driving.

Table 5.74: The Ideal Type of Person the Police Force is Trying to Recruit

Ideal Type of Person the Police Force is Trying to Recruit	No	%
Of good character	3	25.0%
No one ideal type	4	33.3%
See official profile	2	16.7%
Physically and medically fit	4	33.3%
Good communication skills	6	50.0%
Self discipline and accept discipline	3	25.0%
Interpersonal relationship skills	4	33.3%
Good analytical skills	2	16.7%
Decision making/problem solving/planning skills	3	25.0%
Enjoy dealing with people from all backgrounds	3	25.0%
Concern for the well being of society	1	8.3%
Common sense	4	33.3%
Judgement	2	16.7%
Maturity	4	33.3%
Good educational background	2	16.7%
Aged 18 1/2 upwards	3	25.0%
Honest with self and others	3	25.0%
Foresight and initiative	3	25.0%
Tolerant	2	16.7%
Work alone and as part of a team	2	16.7%
Compassion/Empathy	2	16.7%
Courtesy	1	8.3%
Integrity	3	25.0%
Motivation and commitment	2	16.7%
Cope with police training/police life	1	8.3%
Work under pressure	1	8.3%
Observational skills	1	8.3%
Punctuality	1	8.3%
Practical effectiveness	1	8.3%
Smart in appearance	2	16.7%
Investigative skills	1	8.3%
Ability to learn and apply law	1	8.3%
Aware of the issues of policing	1	8.3%
Total	12	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

5.73.2 The Ideal Type of Person for the Traffic Division

Table 5.75 shows that as with recruitment into the police force in general, there are a wide variety of qualities that recruitment officers believe police officers require to join the Traffic Division. Again, in terms of the objectives of the Standard/Response course of the Essex Police (see appendix 1), the qualities stated do not appear to be related to the development of inappropriate attitudes towards driving; for example, calm, common sense, and maturity. Most of the other qualities stated relate to the physical motor skills required to be a police driver in the Traffic Division, the skills required for accident investigation, and the more general skills required to become a police officer.

As with recruitment into the police force in general, two officers, instead of answering the question given, included an official profile giving the requirements to be a member of the traffic Division. Again, these were practically identical to the stated qualities the rest of the recruitment officers had given, showing recruitment officers follow official police policy regarding recruitment into the Traffic Division

In summary, in terms of the objectives of the Standard/Response course of the Essex Police (see appendix 1), it would seem that the qualities required to become a member of the Traffic Division are not associated with inappropriate attitudes towards driving.

Table 5.75: The Ideal Type of Person for the Traffic Division

The Ideal Type of Person the Traffic Division is Looking for	No	%
Fulfil criteria set in job description .	2	16.7%
Ability to analyse detail.....	2	16.7%
Merit (performance, health and conduct records).....	1	8.3%
Report writing skills.....	1	8.3%
Interested in traffic matters.....	2	16.7%
Appreciates the need to enforce traffic legislation.....	1	8.3%
High standard of driving (police test)..	6	50.0%
Hold a full car and motorcycle driving licence.....	1	8.3%
Knowledge of/interest in motor vehicles.	2	16.7%
Self motivated.....	3	25.0%
Competent in all aspects of police duty.	2	16.7%
Have a varied experience	1	8.3%
Decisive.....	2	16.7%
Passed initial training.....	1	8.3%
Common sense and maturity.....	1	8.3%
Able to work unsupervised.....	4	33.3%
Committed to providing a public service.	1	8.3%
Mathematical skills for accident investigation.....	1	8.3%
Require the attributes of a beat constable.....	2	16.7%
Not less than 2 years service.....	2	16.7%
There is no ideal type.....	1	8.3%
Calm.....	1	8.3%
Quick responses.....	1	8.3%
High adrenalin threshold.....	1	8.3%
Total.....	12	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

5.73.3 Is the Enjoyment of Exciting Situation Something that will Enhance recruitment into the Police force?

Recruitment officers in answering this question were considerably divided in their responses. 65% felt the enjoyment of exciting situations enhances recruitment, and 45% felt that it does not enhance recruitment into the police force.

From table 5.76, it can be seen that the majority of recruitment officers who feel that the enjoyment of exciting situations does enhance recruitment into the police force state that this is because of the image of the police portrayed by the media. Thus, whilst excitement seeking is not a quality that is looked for in candidates who apply to become police officers, excitement seekers are attracted to the police force due to the media glamorising and highlighting the more exciting elements of police work. For

example, the media often focuses on high speed driving for television drama and documentary programmes of the police.

Other responses from recruitment officers mainly relate to recruits seeing the challenging nature of police work as exciting, and also seeing excitement as a form of job satisfaction. These relate to the perceived nature of police work, and again could be due to the media image of the police, as they are not aspects of police work that are highlighted by recruitment literature and recruitment officers.

Table 5.76: Why the Enjoyment of Exciting Situations Enhances Recruitment into the Police Force

Why the Enjoyment of Exciting Situations Enhances Recruitment	No	%
Exciting situations attract recruits due to media image.....	3	50.0%
Gives a limited form of job satisfaction	1	16.7%
Most see the job as "high powered cars and flashing lights".....	1	16.7%
The uncertainty of challenge (excitement) attracts people.....	2	33.3%
The perception of excitement attracts some recruits.....	1	16.7%
Total.....	6	100.0%
NB: Multiple Responses Mean Percentages may not add up to 100%		

Table 5.77 shows that recruitment officers who feel that the enjoyment of exciting situations does not enhance recruitment into the police force mainly state that this was because police officers should not be excitable, meaning that such individuals would not be suitable to joining the police force. In addition, excitement is not the main element of the job, and such feelings will therefore not enhance recruitment.

It can be seen that this question was interpreted in two different ways by recruitment officers. Those who felt that it did enhance recruitment meant that it caused a lot of people to apply to the Police Force, whereas those who felt that it did not enhance recruitment meant that such feelings would not give an applicant a better chance of being accepted as a new recruit into the Police Force, as it is not something that is seen as benefiting a police officer in performing his/her duties.

These findings show that the enjoyment of exciting situations may attract people to apply to join the police force, but it is not something that will enhance an individual's chances of being accepted into the police force, as it is not a quality that recruitment officers are looking for in new recruits. Although it is not the aim of recruitment officers to recruit excitement seekers, it is inevitable that the attraction of excitement seekers to apply to join the police force (due to the media image of the police) will cause some recruitment of excitement seeking individuals into the police force.

Table 5.77: Why the Enjoyment of Exciting Situations Doesn't Enhance Recruitment Into the Police Force

Why the Enjoyment of Exciting Situations Doesn't Enhance Recruitment	No	%
Should not be excitable, but remain calm	1	20.0%
Avoid glamorising police work.....	1	20.0%
Excitement is not the be all and end all of the job.....	2	40.0%
Enjoyment of exciting situations is not assessed.....	1	20.0%
Excitement seekers may have false expectations.....	1	20.0%
Do not promote the police as an exciting job.....	1	20.0%
Such feelings do not make an efficient traffic officer.....	1	20.0%
Excitement seekers are unsuitable for many police careers.....	2	40.0%
Total.....	5	100.0%

NB: Multiple Responses Mean Percentages may not add up to 100%

5.74 Summary of Recruitment Policy Research

In terms of the objectives of the Standard/Response course of the Essex Police (see appendix 1), it can be seen that the recruitment literature available and the evaluation criteria of recruitment officers does not emphasise inappropriate attitudes towards driving (for example excitement seeking), and such attitudes would not increase an individual's chances of recruitment into the police force. However it does appear that some potential applicants are excitement seekers, attracted to the police force because of its exciting elements, due to their emphasis by the media. It could be that such individuals do get accepted into the police force, and thus have inappropriate attitudes towards experiencing thrill and excitement when undertaking their duties (for example, driving to an incident).

The results for this element of the research are based on a small sample of recruitment officers, and should therefore be treated with some caution as they may not represent the majority of recruitment officers' opinions. However the findings are supported to some degree by research by Dennis (1990) who found that the majority of new recruits into the police force were excitement seekers.

5.8 DISCUSSION OF RESULTS

The research has discovered that after taking the training course, the vast majority of trainees possess the skills taught on the course, and have a positive attitude towards these skills. However, a small majority of trainees also possess inappropriate attitudes (in terms of the objectives of the course; see appendix 1) towards high speed driving, enjoying the thrill and excitement experienced by such driving. The training has little effect on changing these attitudes, with the extra two week response phase in-fact enhancing them. In addition, the trainees selected for the response phase possess these inappropriate attitudes to a greater degree, both before and after training. It seems that police driver training is ineffective in developing appropriate attitudes towards speed and also in selecting trainees with appropriate attitudes for response training. Driving instructors however were unaware that these problems existed and believed that the vast majority of trainees generally had appropriate attitudes towards driving at the end of the course.

Having undertaken the training course, attitudes towards speed, thrill, and excitement remain constant, but attitudes towards the skills taught on the course (although remain positive), significantly deteriorate over time. This deterioration in attitude may explain why several skills taught on the course are no longer used by a significant number of trainees during their leisure time, and a small number during police duty.

From undertaking the research, it is felt that the following are the main reason why training is effective in developing appropriate attitudes towards driving:

1) Whilst the course officially is aimed at teaching safe driving skills and attitudes, much less emphasis is placed on attitudes by instructors (with only 10.5% of instructors emphasising appropriate attitude development as something that the Standard/Response driver training course was trying to achieve). It is therefore not surprising that little change in attitudes towards driving was discovered at different stages of the course (see section 5.62).

2) There is some evidence to suggest (see section 5.3) that driving instructors may not be correctly teaching the use of speed and overtaking techniques, which may cause trainees to develop inappropriate attitudes towards these aspects of driving.

3) Instructors were found to act as role models for trainees, aspiring to drive to their standard. However, a significant number of instructors perhaps inadvertently over-emphasized speed. It could be that this over-emphasis displayed by instructors is then copied by aspiring trainees.

4) Instructors may place too much emphasis on the skills taught on the response phase of the training, despite the fact that these skills were only taught on the last third of the course. As these skills to a large extent involve the use of speed, it might be that speed was over-emphasised, with the instructors' attitude affecting the way the use of speed was taught and perceived.

5) The police service may attract and recruit excitement seeking individuals. This is not due to recruitment policy, but rather due to the media image of the police, which tends to portray the work of the police as being one of all action and excitement.

Another cause of the ineffectiveness of police driver training in developing appropriate attitudes towards speed, thrill, and excitement may be due to the fact that

speed and excitement have been found to be central to the police occupational culture (Holdaway, 1983, p55-57). Holdaway found that during quiet periods, officers create a sense of speed through driving fast (often dangerously), and also talking about and glamorising car chases. Holdaway believed that speed and action are used during such periods to remind officers of what they believe policing is really like. Thus because the values of the occupational culture stress action and speed, it is difficult for the training course to be effective in counteracting these central beliefs and attitudes of the occupational police culture.

To have an inappropriate attitude towards speed in terms of the objectives of the course (see appendix 1) may not necessarily cause accidents or dangerous driving behaviours, if speed is used in conjunction with skill level of an individual. However, the course at Essex is only a modified standard course, and is limited in the degree to which such skills as pursuit and containment can be developed. In addition, some trainees no longer use all the skills taught on every occasion that they drive. Such attitudes towards speed and thrill are therefore potentially dangerous to possess. In addition, having an inappropriate attitude towards speed may cause drivers to pursue excitement and thrill using high speed driving, driving fast whenever possible, rather than when it is required. This may cause them to take unnecessary risks when driving.

It is perfectly possible to drive fast and safely without experiencing thrill and excitement. In such a situation drivers will be in a better state to deal with incidents they are called to when reaching them.

In this chapter, the results of each element of the research have been outlined and discussed. In the next chapter, an evaluation of the methodology that was used to undertake the research will be made.

CHAPTER 6

AN EVALUATION OF THE RESEARCH METHOD

6.0 Introduction

In this chapter, the methodology that the research adopted will be evaluated. The evaluation will be undertaken by providing an overall evaluation of the methodology, and also by providing an evaluation of specific elements of the research. The evaluation will be undertaken by stating any problems that occurred on undertaking the research, and evaluating if such problems can be overcome. A conclusion will then be drawn as to whether the overall method was effective.

6.1 General Evaluation of Methodology

There were two possible problems that affected all elements of the research. These will be dealt with in turn.

6.11 The use of Questionnaires

As questionnaires were used for each element of the research, the problems associated with this method of data collection will affect, to a certain degree, all elements of the research. The main general problems affecting the present research are:

1) The attitudes and values of the researcher may have been communicated to respondents through interaction and through the wording of questions. Whilst a conscious attempt was made to eliminate such biases, they might have influenced the way respondents answered questions.

2) The results from the questionnaires were assumed to reflect respondents' attitudes and behaviours in everyday life. However, the results obtained may have had little to do with an individual's attitudes and behaviour. Even when respondents give completely honest answers, they may not state many of the attitudes and beliefs they use in everyday life, as an individual can become unaware of their attitudes and beliefs if they have been activated at an unconscious level (see chapter 3, section 3.42).

3) As little overall interaction was made with respondents, a relationship of trust may not have ben established. The research could therefore have been viewed with suspicion and mistrust. Information may not have been given by respondents as they could have been suspicious of the police force being researched by a member of the general public, especially as police driving has recently been the focus of criticism by the media (for example, Hill, 1989). Police officers may thus have felt sensitive to questions regarding driving and therefore not provided honest answers to the questions given. Organisations have in the past viewed research by a member of the general public in this manner. For example, Becker (1971, p211, cited in Haralambos and Heald, 1980, p509) claims that American school teachers believe that they have a lot to hide from what they regard as "prying, misunderstanding, and potentially dangerous public."

Although every attempt was made to overcome the above problems, they may have affected the research to some degree, the extent to which is unknown. It is important that these problems are recognised, as they could provide an explanation for some of the results that were obtained (for example, the problems encountered with the recruitment policy research, see section 6.23). In addition, by recognising these problems, it may provide an insight into how these problems can be overcome by further research.

6.12 Concentrating Research on Speed, Thrill, and Excitement

The research focused upon attitudes towards speed, thrill, and excitement, as primary research (see chapter 4, section 4.12) revealed that these were the main areas where appropriate attitudes towards driving needed to be developed. The research therefore assumed what was relevant and important for the training course and the trainees undertaking the course. However, there may have been attitude problems regarding driving that the primary research did not discover (for example, attitudes towards other road users, aggression, speed limits etc). Future research could therefore be undertaken to cover these areas. Although more detailed primary research could have been undertaken, it must be noted that the focus on attitudes towards speed, thrill, and excitement was reinforced by previous research conducted on the general public, and on the police force (see chapter 4, section 4.12).

6.2 Evaluation of Specific Elements of the Research

Overall, each element of the methodology was effective in obtaining the information required for the research. This section will consider any particular points that should be considered regarding specific elements of the research.

6.21 The Most Appropriate Method of Measuring Attitudes

To establish the effectiveness of police driver training on the development of appropriate attitudes towards driving, direct, semi-direct, and indirect techniques of attitude measurement were applied. These aimed to discover which of these three methods was more appropriate, and also to increase the validity of the conclusions drawn by giving a more comprehensive evaluation of trainees attitudes.

Having undertaken the research, it must be noted that each method was effective in measuring attitudes, and provided useful insights into the scope of the problem facing police driver training. In terms of providing concrete measures of the degree of attitude change before and after training, the direct technique was the most appropriate method, as direct questioning meant that scales could be used to measure the strength of attitudes before and after training. Such an evaluation would have been difficult and complex to measure using the semi-direct or the indirect measurement technique. However, the semi-direct and indirect techniques, as used open ended questions were more flexible in the range of beliefs regarding driving that could be measured, and did provide additional insights regarding inappropriate attitudes towards driving that the direct approach did not reveal (for example, overtaking). They were also considerably useful in reinforcing the findings of the direct attitude measurement. The three methods used in conjunction with one another were therefore considerably effective in providing a comprehensive evaluation of the effectiveness of police driver training.

In summary, in terms of providing concrete measures of attitude change, the direct technique was most effective. However, by using the semi-direct and indirect

techniques in conjunction with the direct technique, conclusions can be reinforced, and additional new insights can be gained.

6.22 Indirect Attitude Assessment

The use of videos was effective in its ability to measure beliefs regarding each video sequence. However, in administering the video and analysing the data, several areas of improvement were identified:

6.22.1 Length of Video Sequences

On administering the video questionnaire to driver trainees, it was noticed that several trainees did not pay attention to the later elements of each video sequence. In addition, some trainees stated that the whole exercise was too lengthy (The exercise took approximately fifty minutes after the standard phase and thirty minutes after the response phase of training). The videos deliberately contained elements of featureless driving, so as not to sensitize trainees to specific driving manoeuvres (see chapter 4, section 4.124). However it seems that these elements of the videos may have been too long, causing boredom and inattention to occur. Trainees could therefore have missed several of the behaviours shown in the video. To overcome this problem, the elements of featureless driving could be reduced in an attempt to increase the level of attention shown by respondents. Although the time taken to complete the video questionnaire could have been reduced by decreasing the number of video sequences, it is felt that this will not significantly increase attention as attention only appeared to diminish at the end of each sequence, rather than as the whole exercise progressed.

6.22.2 Picture Quality of Video Sequences

The picture quality of the video sequences could be improved by using more sophisticated techniques for filming and editing the videos. For example, this task could have been undertaken by a professional organisation possessing the appropriate skills and equipment, rather than an unskilled researcher, with limited facilities to undertake the task.

6.22.3 Comparing Attitudes Before and After Training

As the technique was only applied after each phase of training, it was not possible to compare attitudes before and after training, as well as after each phase of the course. This was not undertaken in the study due to there not being enough time at the beginning of the training programme for the technique to be applied. In addition, it was also felt that different video sequences would have to be shown, as familiarity with the videos may affect the responses given. The production of similar, but different videos was not possible, due to the filming and editing facilities available for the research.

6.22.4 Trainees Possibly Thinking That They Were Undertaking a Test

The video questionnaires were administered on the last day of each phase of the training. The trainees had all been examined, but did not know how they had been graded. If it is assumed that most trainees wanted to do well on the training course, they might have felt, despite statements to the contrary, that their answers might affect their grading by police instructors. This could have caused trainees to only give the answers that were conducive to road safety, rather than their true salient beliefs about the driving shown in the video sequences. This problem may have been overcome if the videos were shown some time after the training course was

undertaken. However, as the trainees were dispersed over a wide geographical area on completing the course, such a procedure would have been impractical.

6.22.5 Differences in the way the Videos Were Administered to Driver Trainees and Driving 'Experts'

The video was administered to trainees at the end of each phase of training in a classroom situation, with the researcher present to ensure the videos were watched and the questionnaires completed according to the instructions. The driving 'experts' were sent a copy of the video with written instructions and instructions given on the video as to how the exercises should be undertaken. The slight differences in the administration of the video questionnaire meant that the driving experts had the opportunity to undertake the exercise as they felt was correct, rather than as stated by the instructors. Although the extent of this problem is largely unknown, several driving 'experts' stated that they watched the video sequences more than once, and paused the video whenever a particular good or bad point was observed. The driving 'experts' who undertook the exercise in this manner were therefore in a better position to observe the behaviour in the video and form positive and negative beliefs regarding the video. To eliminate this problem, it might have been better if the 'experts' were administered the questionnaire in the same manner as the trainees. However as this was practically unfeasible, it is felt that the video questionnaire was administered in the best possible way to the experts, and that in using the method, the problem must be recognised as a possible explanation for some of the results obtained.

6.23 Skill Assessment

The assessment of trainees' skills was undertaken by an overall evaluation by instructors on a seven point scale, a percentage mark for the course (which could not be used, see chapter 5, section 5.41), and an analysis of possible driving problems that trainees would experience. This assessment only gave a general evaluation of driving skills and did not give any indication of trainees' ability to undertake specific skills. A more detailed assessment of driving skills would have been provided if instructors had to rate trainees on specific elements of the training; for example, observation and planning, basic motor skills etc. However, the method used for the current research did provide an adequate assessment of driving skill, assuming that each element of the training was considered when instructors rated the trainees.

The skill assessment was undertaken by the driving instructors who taught the trainees, as it was felt that they possessed the skills required to make such an assessment, having taught and supervised the trainees for four to six weeks. However, this may have led to biased results from instructors who may not have wanted to admit that the driver training course, and their training in particular was not effective in teaching advanced driving skills to a sufficient standard. Ideally, independent assessors should have been used, from an independent driver training organisation, or perhaps another police force. Due to these problems, the results from the skill assessment should be treated with some caution, although do remain useful for the purposes of the present research.

6.24 Recruitment Policy Research

Whilst the questionnaire sent to recruitment officers provided some useful information regarding possible reasons why some drivers in the police force have inappropriate attitudes towards driving, the responses also highlighted some problems in the methodology that was adopted. The following are the main problems that were highlighted:

6.24.1 Non Response

Only 24% (12) of questionnaires were returned for analysis which was a very disappointing response rate. This means that the results and conclusions from this element of the research have to be treated with caution as they may not reflect the opinions of recruitment officers throughout the police force. The main reason for the low rate is that recruitment officers were not allowed to give such information to members of the public. A letter obtained from a recruitment officer who refused to fill in the questionnaire confirmed this.

6.24.2 Wording of Questions

Although extreme care was taken in the wording of the questions, the questions regarding the enjoyment of exciting situations were interpreted in two different ways by recruitment officers (see chapter 5, section 5.723). As recruitment officers were given the opportunity to qualify their statements for these questions, this was not such a large problem and provided some useful information. However if the questions were worded more specifically, referring to both the interpretations made by recruitment officers, far better results would have been obtained.

6.24.3 Official View Rather Than Subjective Opinions

The answers given regarding the ideal type of person for the police force in general, and for the Traffic Division were almost identical to the official police guide-lines recruitment officers follow. It might be that recruitment officers have some subjective opinions that they use for evaluation that are not expressed on the questionnaire. Perhaps these questions could have been worded better, in order to reveal such opinions.

6.24.4 Summary

The problems inherent within the questionnaire sent to recruitment officers could probably have been overcome if it had been piloted on a sample of recruitment officers. This element of the research therefore demonstrates the importance of undertaking a pilot study in determining the quality of the results obtained

Although the questionnaire sent to recruitment officers suffered from several problems, the results obtained were still considerably beneficial to the research, and provided some insight into the source of inappropriate attitudes towards driving by some police officers.

6.3 Summary and Conclusion to Chapter 6

Overall, despite experiencing several problems in undertaking the research, the method that was used to undertake the research was successful, with the problems experienced not drastically affecting the overall results that were obtained. It is also felt that if future research adopted a similar methodology, it could overcome the problems experienced by this research.

The research has shown that it is possible to measure attitudes towards driving using traditional methods of measurement (such as direct and semi-direct questioning), and has also shown that new indirect methods of attitude measurement can provide an additional insight into an individual's beliefs and attitudes towards driving. The research has also highlighted many areas where the driver training given by the Essex Police could be improved that those who set up and run the course may have been

unaware of (for example, overtaking), and will therefore be of use in improving the training. In addition, along with assessing attitudes, the research also looked at potential sources of inappropriate attitude development that can also be taken into consideration in attempting to improve training.

In the next chapter, conclusions will be drawn from the research, and areas where further research is required will be outlined.

CHAPTER 7

CONCLUSIONS AND FURTHER RESEARCH

7.0 Introduction

In this chapter, conclusions will be made with regards to the effectiveness of the Standard/Response driver training course of the Essex Police, and areas where further research is required will be stated. Finally, the wider implications of the research in terms of road safety will be discussed

7.1 Main Conclusions of the Research

The research has discovered that although the Standard/Response driver training course of the Essex Police is effective in developing driving skills and attitudes towards them, it is ineffective in developing appropriate attitudes towards speed, thrill, and excitement in terms of the objectives of the course (see appendix 1). In addition, attitudes towards the skills taught significantly deteriorates over time, with a significant number of trainees not applying the techniques taught. This is felt to be partly due to driving instructors not emphasising appropriate attitude development, and also due to the attraction of some excitement seeking individuals to join the police force, caused by the media image of the police. Overall, the Standard/Response course therefore seems to be ineffective in terms of achieving its objectives (see appendix 1).

Although it is concluded that the training is ineffective, it is felt that the driver training undertaken by the Essex Police can be effective, if more emphasis is placed on appropriate attitude development, and developing methods to undertake such training within the existing training programme. Suggestions have therefore been made regarding possible ways that this may be undertaken (see section 7.2).

The methodology that was adopted to conduct the research generally was effective in obtaining the data required, with only minor changes suggested if a similar method is to be used in the future.

7.2 Further Research

The present research highlighted several areas that require further research. These will be dealt with respectively.

7.21 Comparison of the Effectiveness of Other Advanced Driver Training Programmes

The present study focused upon the Standard/Response driver training course of the Essex Police to establish the effectiveness of police driver training. Although all police forces apply the same overall technique (Roadcraft, 1977), there are differences between the content of driver training courses offered by different police forces, and the teaching techniques that are adopted. It would be interesting to compare the effects of such differences on driver trainees' attitudes and skills, and also to compare the attitudes and opinions of instructors. It was hoped that the present research would include a comparison with the driver training given by the Metropolitan Police who

have a very different driver training system. However permission was not given by the Metropolitan Police to conduct research. It is suggested that further research should compare the effectiveness of different advanced driver training programmes, to establish the importance of differing course contents and teaching techniques on the development of skills and appropriate attitudes towards driving.

7.22 How to Develop Appropriate Attitudes Towards Driving

The research revealed that the Essex Police Standard/Response driver training course needs to place greater emphasis on appropriate attitude development. The way of achieving this objective is clearly outside the terms of reference of this research, and it is suggested that further research be undertaken to establish how to develop appropriate attitudes in a programme of police driver training. At present it felt that further research should focus upon the following areas:

7.22.1 Psychological Approaches to Changing Attitudes

There are several psychological approaches to changing attitudes that could perhaps be applied to driver training:

1) Neurolinguistic Programming (NLP) is a technique that uses mental imagery in an attempt to make individuals aware of their attitudes and beliefs, and their effect on other people. This approach has recently been applied to advanced driver training, with a company offering such training (The Driving Business). However, the effectiveness of these techniques on developing attitudes towards driving has not been established. In addition, the effectiveness of NLP itself is debatable (see Baddeley, 1989) and further research is therefore required to establish the usefulness of this technique.

2) Handy (1985) states that for individuals to change their attitudes, they need to be clear about what needs to be changed, and then have an action plan breaking change down into a series of stages. In undertaking this task an individual also has to take into consideration the emotions aroused and the people involved.

3) Bannister and Fransella (1986, p119) state that for attitudes to change, an individual has to assume 'he' is going to change, and mentally prepare to be a different person. The individual has to have a clear picture of what 'he' will be like when 'he' has changed, and then has to behave as if 'he' were already the person 'he' would like to be. By doing this, any problems can be identified and understood in advance, so that preparations can be made to overcome them should they arise.

7.22.2 Projective Techniques

There are numerous projective techniques of data collection that could be applied to driver training which could make individuals aware of their attitudes, and hence highlight the need for change (for example, see Kassarjian, 1974). These could be applied to driving and used as training exercises.

7.22.3 Use of Videos

The videos used for the indirect assessment of trainees' attitudes were very effective in displaying good and bad driving behaviours (due to poor attitudes and poor skill levels). These videos could be used for teaching purposes, as a visual representation

of such behaviours is far easier to identify with than a drawing or a verbal description. The merits of using the videos for teaching purposes was in-fact recognised by several members of the panel of 'experts' used for the indirect attitude assessment, who have requested a copy of the video used in the research for their own use.

7.23 Will the Style of Instruction Improve the Effectiveness of Training on Skills and Attitudes?

On undertaking the primary research, and from making the video sequences of driving behaviour (see chapter 4, sections 4.12 and 4.144), it was discovered that there may be a need for improvement in the style in which instruction was given to trainees. There seemed to be very little feedback given by instructors on trainees' performance. This lack of feedback was also recognised by some trainees, when stating the bad points of the training course (see chapter 5, section 5.24). In addition, any comments made by instructors involved remarks which told the trainees what to do. This form of instruction has been found to be less effective than the use of teaching remarks, which help trainees think for themselves, increasing their ability to transfer their knowledge to other situations (Downs et al, 1982). This problem has also been recognised by Amey (1989b, 1989c) in an evaluation of police driver training instruction.

As the extent to which instructor style is affecting skills and attitudes within the police force is not known, it is suggested that further research be undertaken which could compare the style of instruction between different police forces, and also discover if a change in the style of instruction within a particular police force has any impact on skills and attitudes.

7.24 Research into Police Pursuit Policy

It is felt that a through examination of the conditions under which high speed police pursuits are permitted is required, given the safety and cost implications of such a tactic. It has often been suggested that "joyriders" are encouraged to steal and drive cars at high speeds by the fact that they may be chased by the police. Research into how to change police pursuit policy may therefore have the potential to reduce the number of road accidents, and may also discourage "joyriding."

7.25 The Effect of Peer Group Pressure on Attitudes Towards Driving

The present research looked at other factors in addition to driver training that may influence attitudes towards driving within the police force, evaluating the effect of instructor's influence on trainees' attitudes, and the effect of recruitment policy on attracting individuals with inappropriate attitudes into the police force. However, there may have been other factors that were not considered by the present study. In particular, it is felt that peer group pressure could have a significant effect on an individual's attitude towards driving. Although the measures of attitudes that were made would be affected by peer group pressure, it is impossible to infer the extent to which it affects a police officers attitudes. Research is required to discover the extent to which peer group pressure affects attitudes, whether it causes inappropriate or appropriate attitude development, and to discover how to overcome peer group pressure if it is in-fact causing inappropriate attitude development. Research undertaken on young drivers by Ingham (1991) reveals that peer group pressure is a significant problem among young drivers. As there are many young drivers within the police force, it is highly probable that peer group pressure is a problem within the police force. However, research would be required to determine whether this is the case.

7.26 Research into Overcoming Stress

It is felt that stress will particularly affect police drivers due to the nature of the job they undertake; for example pursuit driving, and driving to road traffic accidents. It is quite possible that a police officer will have a positive aggressive attitude towards driving (for example, driving fast, taking risks, and not considering other road users) while experiencing stress that would otherwise would not be displayed to the same degree or displayed at all. Under such circumstances, aggression is being used to cope with stress, and is caused by an individual's attitude towards coping with stress, and also their attitude towards driving. Using aggression during driving is in-fact an inefficient coping strategy (Gulian et al, 1990).

At present, no techniques are used in the Standard/Response course of the Essex Police to inform drivers how to cope with stress. It is suggested that further research should concentrate on developing efficient coping strategies towards stress which can be incorporated into driver training programmes. The adoption of these strategies could also have the effect of improving attitudes towards driving.

7.27 Skill Development

There has been a considerable amount of research undertaken on how skills are developed, and methods of developing skills. For example, Duncan et al (1991) have undertaken an analysis of how skills develop with increased driving experience (see chapter 2, section 2.5). Other notable research undertaken on driving skill is that by Downs et al (1982) who analysed the effect of instructor style on driving ability (see section 7.23). It might be that different methods of skill development may be more effective than those currently in use, possibly also being able to develop attitudes. Research is therefore required to:

1) Evaluate the research undertaken on the techniques available to develop driving skills.

2) Discover whether such techniques can be applied to advanced driver training.

3) Discover and evaluate new techniques of skill development.

7.28 Driving Techniques

The present study discovered that there were some driving techniques which trainees no longer used after having undertaken the driver training course. Research is required to discover why these techniques are no longer being used, and if modifications can be made them that will increase their usage, while at the same time maintaining safety standards.

7.3 Wider Implications of the Research in Terms of Road Safety

The vast majority of advanced driving available to the general public in Great Britain (for example, the training offered by the Institute of Advanced Motorists, and the Royal Society for the Prevention of Accidents) adopt a similar driving technique as used on the four week standard phase of the Standard/Response course of the Essex Police (Roadcraft, 1977). The skills taught during the extra two week response phase are not taught as these are specialist skills required by a police officer (for example, pursuit and containment, two tone horn training). However, the degree of emphasis given by these organisations to appropriate attitude development is unknown. It is felt

that these training programmes can only be effective in improving road safety if greater emphasis is placed on appropriate attitude development than is currently being placed on the Standard/Response course of the Essex Police.

If the standard phase of the Standard/Response driver training course of the Essex Police became mandatory for all drivers to undertake, it is not expected that any significant changes in the number of accidents would occur. However, if such training was undertaken on a voluntary basis, it is felt that the training will reduce the number of accidents for those who undertake it, because individuals who opt for such training are likely to be more safety conscious, having an appropriate attitude towards driving before the training. Hence, having being taught the advanced driving skills, a reduction in the number of accidents such individuals are involved in would therefore be expected.

7.4 Summary of Chapter 7 and Conclusions

This chapter has drawn conclusions regarding the research, and has suggested areas of further research. The implications of the research in terms of road safety have also been discussed. It is hoped that this research can be used to improve driver training programmes, which will hopefully lead to an improvement in road safety.

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Appendix 1

Aims and Objectives of the Standard/Response Driving Course of the Essex Police

ESSEX POLICE : DRIVING SCHOOL

STANDARD/STANDARD (RESPONSE) DRIVING COURSE

PHASE ONE

WEEK ONE

MONDAY		
	0945	Arrival - Administration - Eyesight Tests
	1030	Opening Address
	1045	Objectives of the course and Explanation of syllabus. Attitudes and responsibilities. Roadcraft Video
	1215	LUNCH
	1300	Classroom input - Systematic driving
	1400	Demonstration drive by Driver-Trainers
	1500	Driving by students
	1700	End of day
TUESDAY		
	0900	Highway Code/Roadcraft - Knowledge evaluation
	0915	Attitude Training/Testing
	1015	Technical Presentation - Mechanical appreciation and vehicle care
	1215	LUNCH
	1300 to 1700	Driving by Students with demonstration Town and Urban Areas
WEDNESDAY		
	0900	Highway Code/Roadcraft - Knowledge evaluation
	0915	Staff Presentation - Observation and Positioning
	1215	LUNCH
	1300 to 1700	Demonstration drive by Driver-Trainer Driving by students - car control, positioning and observation
THURSDAY		
	0900	Highway Code/Roadcraft - Knowledge evaluation
	0915	Staff Presentation - Cornering & Overtaking
	1030	Driving by students - Town work
	1215	LUNCH
	1300 to 1700	Demonstration drive by Driver Trainers Driving by students - Cornering and overtaking on both urban and rural roads
FRIDAY		
	0900	Highway Code/Roadcraft - Knowledge evaluation
	0915	Driving by Students
	1215	LUNCH
	1300 to 1430	Car Care - Progress evaluation Interviews Attitude assessment

OBJECTIVES: By the end of this week the student should have an appreciation of systematic driving - showing planning - observation and anticipation with an awareness of danger and car care. Driver-Trainers should now be aware of any attitude traits shown by students and prepare to mould any adverse traits accordingly.

WEEK TWO

MONDAY		
0945	Skidding demonstration and practical	
1030	participants of students	
1215	LUNCH	
1300	Skid Pan work/Local Driving	
to		
1700	Local driving/Skid Pan work	
TUESDAY		
0900	Highway Code/Roadcraft - Knowledge evaluation	
0915	Driving/Skid Pan/Manoeuvring and reversing	
1215	LUNCH	
1300		
to	Driving/Skid Pan/Manoeuvring	
1700		
WEDNESDAY		
0900	Highway Code/Roadcraft - Knowledge evaluation	
0915	Driving Local Housing estate roads, Turning Round	
1030	Technical Presentation and Attitudinal Training	
1215	LUNCH	
1300		
to	Driving - Anti lock brakes demonstration	
1700		
THURSDAY		
0900		
to	Driving - Day Run - CITY OF LONDON (Home Counties Route	
1700		
FRIDAY		
0900	Highway Code/Roadcraft - Knowledge evaluation	
0915	Driving	
1215	LUNCH	
1300	Car Care -	Progress evaluation
to		Interviews
1430		Attitude assessment

OBJECTIVES:- By the end of this week the student should be systematic with good vehicle sympathy. The basic concepts of the Roadcraft should be evident in the driving and good attitudinal approaches to police vehicle driving should be displayed.

WEEK THREE

MONDAY		
1730	Roadcraft video	
1800	Demonstration drive by Driver-Trainer	
1830 to 2330	Driving - Techniques of night driving	
TUESDAY		
0900	Highway Code/Roadcraft - Knowledge evaluation	
0915 to 1215	Driving by student	
1215	LUNCH	
1300 to 1700	Progress check by Co-Driver-Trainer	
WEDNESDAY		
0900	Highway Code/Roadcraft - Knowledge evaluation	
0915 to 1215	Skid Pan/Manoeuvring and Reversing / ~~it~~ Staying	
1215	Driving by students	
1300 to 1700	LUNCH Skid Pan/Manoeuvring and Reversing Driving by students	
THURSDAY		
0900 to 1700	Driving by students - Day Run	
FRIDAY		
0900	Highway Code/Roadcraft - Knowledge evaluation	
0915 to 1215	Driving	
1215	LUNCH	
1300 to 1430	Car Care -	Progress evaluation Interviews Attitude assessment

OBJECTIVES:- The student should be fully systematic, able to demonstrate a sound application of all the principles of ROADCRAFT. Have good car control and machine sympathy. Be aware of his/her capabilities. To be completely safe showing anticipation and observation, with confidence under all conditions.

The trainee driver should be able to drive in a manner becoming a Police Officer. Aware of the responsibilities and stress created by driving a Police vehicle.

A highly developed sense of responsibility and correct attitude should be evident.

WEEK FOUR

MONDAY		
	0945	Skid Pan and Manoeuvring
	to	
	1215	Driving by students
	1215	LUNCH
	1300	Skid Pan and Manoeuvring
	to	
	1700	Driving
TUESDAY		
	0945	
	to	Driving by students - Day Run
	1700	
WEDNESDAY		
	0900	Theory Assessment of Roadcraft,
	to	
	1015	Highway Code and Mechanical
	1030	
	1215	
	1215	LUNCH
	1300	
	to	Final cross checks with Co-Driver-Trainer
	1700	
THURSDAY		
	0900	Evaluation by Assessment Drive and
	to	Assessment of suitability for
	1700	Response Driving
FRIDAY		
	0900	Interviews - explanation of further training
	to	and advice on remedial training if required
	1215	Car Care - Driver Trainers de-brief
	1215	LUNCH
	1300	Responsibilities of Police Driver
	to	Approach and position at scene of incident
	1430	Radio procedure and the theory of the pursuit and stopping of vehicles

ESSEX POLICE : DRIVING SCHOOL

STANDARD/STANDARD RESPONSE DRIVING COURSE - PHASE TWO

RESPONSE AND CONTAINMENT DRIVING

TWO WEEKS

WEEK ONE

MONDAY		
	0945	Open Course - Explanation of objectives. The use of speed
	1015	Class Discussion on the use of blue lights and audible warning equipment. The effects on other motorists and the Police Driver. Attitude development - the need for fast response. Legal position. Situation reports on arrival at scene and positioning of Police vehicle
	1215	LUNCH
	1300	Demonstration drive by Driver-Trainer in "Response" situation
	1330 to 1700	Driving by students - Driver-Trainer to use this session to evaluate students reactions and abilities General discussion in open forum
TUESDAY		
	0900	Experience - Response Mode - off public roads (Boreham Airfield)
	1215	LUNCH
	1300 to 1700	Practical Experience - off public roads (Boreham Airfield) -
WEDNESDAY		
	0900	Response Driving - rural and urban roads
	1215	LUNCH
	1300 to 1615	Response driving - rural and urban roads Course discussion and de-brief on Response
	to 1700	Driving - remove any ambiguity or other problems with attitude and confidence evaluation
THURSDAY		
	0900	Containment driving - theory - Force Policy and responsibilities - attitude - keeping calm Radio procedure - commentary during a containment situation Discussion on recordings of real pursuits (HQ IR Tapes)
	1215	LUNCH
	1300 to 1700	Demonstration containment drive by Driver-Trainer Driving by students - Containment
FRIDAY		
	0900	Containment and Response Driving
	1215	LUNCH
	1300 to 1430	Car Care - Interviews and tutorials per squad Progress Evaluation

OBJECTIVES: By the end of this week the correct mental attitude with a calm and controlled driving style should be evident. The driving should demonstrate an awareness of the effect on other road users and a Police officer of emergency response and containment driving.
The student should show a mature approach to all the need for emergency response and be able to maintain safety margins under ALL conditions/circumstances.

WEEK TWO

MONDAY	
0945	Containment driving with radio commentary demonstration Driving by student with commentary
1215	LUNCH
1300 to 1700	Containment driving with radio procedure after each drive a discussion with students on radio commentary - squads to work in tandem
TUESDAY	
0900	Response/containment driving on dual carriageways and trunk roads
1215	LUNCH
1300 to 1700	Containment and Response driving Consolidation of all aspects
WEDNESDAY	
0900	Containment exercise - a pre-planned training event to use all students and include radio controller training (HQ Information Room Staff)
1215	LUNCH
1300 to 1700	Skid Pan - Rear wheel drive and a bandit chase on skid pan
THURSDAY	
0900	Assessment drive by students under Response and Containment conditions
1215	LUNCH
1300 to 1700	Patrol speeds - Driving by students
FRIDAY	
0900	Car Care Final Interviews and tutorials
1215	LUNCH
1300 to 1430	Course discussions - de-brief Close of course

OBJECTIVES:- The trainee will be able to demonstrate-

correct approach and positioning at an incident awareness of the stress of fast driving to know the effect on other motorists and on police driver of emergency driving. to identify the need for urgent response, to know the legal responsibilities, to be able to give a clear calm commentary during a pursuit, to know Force Policy in relation to pursuits to be safe and reliable at all times.

Course Title	:	**BASIC CAR DRIVING**
Duration	:	3 Days
Objectives	:	To introduce police officers to the basic principles of safe systematic driving and make them aware of their responsibilities for vehicles and equipment
Target Students	:	All recruits as part of their Module 8 probationary training (Possession of Full Part III DVLC driving licence is a prerequisite for this Course)
Content	:	Theoretical and practical instruction using low powered vehicles with particular emphasis on observation, anticipation, planning and safety margins. Practical and theoretical assessments of driving and Highway Code knowledge
Cost	:	See Appendix A
Course Dates	:	Contact Course Coordinator on (0245) 452775/6

******

Course Title	:	**STANDARD CAR DRIVING**
Duration	:	20 Days
Objectives	:	To produce safe, systematic drivers (within national speed limits) with a defensive driving attitude; the capability of undertaking general patrol duties with sound practical and theoretical knowledge of Roadcraft, Highway Code and the stopping of vehicles
Target Students	:	Police officers who have satisfactorily completed their two year probation period and are required, as part of their duties, to drive low powered non response police vehicle
Content	:	Theoretical and practical driving instruction, skid control, manoeuvering, attitudes and basic mechanics with final examinations on all elements. Practical instruction in the stopping of vehicles
Cost	:	See Appendix A
Course Dates	:	Contact Course Coordinator on (0245) 452775/6

Course Title	:	STANDARD RESPONSE AND CONTAINMENT CAR DRIVING
Duration	:	10 Days
Objectives	:	To equip police officers with an ability to drive under emergency response and pursuit conditions at speeds in excess of all speed limits; to develop recognised attitudes and beliefs which are conducive with emergency response/pursuit driving.
Target Students	:	Police officers who have satisfactorily completed Standard training to a level acceptable for this type of demanding training
Content	:	Theoretical and practical driving instruction both 'on' and 'off' road in fully marked/ equipped police vehicles under emergency response/pursuit/containment conditions. Additional emphasis is placed on tactics, radio procedures and situation reports
Cost	:	See Appendix A
Course Dates	:	Contact Course Coordinator on (0245) 452775/6

******

Course Title	:	PERSONNEL CARRIER DRIVING
Duration	:	3 Days
Objectives	:	To enhance and develop the awareness associated with driving a larger passenger vehicle with particular emphasis on its loading and handling characteristics
Target Students	:	Police officers who have successfully completed Standard Response driver-training
Content	:	Theoretical and practical driving instruction specifically tailored to suit personnel carrier driving in all conditions including manoeuvering and necessary check procedures on the vehicle.
Cost	:	See Appendix A
Course Dates	:	Contact Course Coordinator on (0245) 452775/6

Appendix 2

Interviews with Police and Ambulance Driving Instructors

INTERVIEWS WITH POLICE AND AMBULANCE DRIVING INSTRUCTORS

A series of informal interviews with Police and Ambulance driving instructors was conducted in September 1990 to discover what were the common types of potentially dangerous behaviour exhibited by trainee drivers at the beginning of their course of instruction that hence require correction. Their responses are summarised below and have been grouped into several categories of behaviour exhibited by trainee drivers that the instructors felt could be dangerous, and hence required correction. Each category and its components will now be listed, stating the total number and percentage of respondents who stated driver trainees frequently exhibited such behaviours.

Observation

Type of behaviour mentioned	**No**	**%**
Observation	11	73.3
Forward planning/looking	11	73.3
Observation links	6	40.0
Road sign observation	5	33.3
Rear observation	3	20.0

Basic Motor Skills

Type of behaviour mentioned	**No**	**%**
Braking technique	2	13.3
Late/harsh braking	4	26.7
Late braking (poor observation)	2	13.3
Riding clutch/control	3	20.0
Steering	5	33.3
Mirror	3	20.0
Gears	7	46.7
Lights/indicators	2	13.3
Coordination/smoothness	5	33.3

Consideration for Other Road users

Type of behaviour mentioned	**No**	**%**
Cyclists	1	6.7
Other cars	2	13.3

Speed

Type of behaviour mentioned	**No**	**%**
Appreciation	5	33.3
Too fast	5	33.3
Too slow	2	13.3
Disregard speed limits	1	6.7
Acceleration sense	4	26.7
Reluctance to slow down	1	6.7

Information Processing

Type of behaviour mentioned	No	%
Fatigue recognition	1	6.7
Low anticipation	4	26.7
Lack of concentration	3	20.0
Slow reaction time	3	20.0
Awareness of hazards/dangers	5	33.3
6 features of car control	1	6.7

Specific Manoeuvres

Type of behaviour mentioned	No	%
Cornering technique	2	13.3
Curb parking	1	6.7
Reversing	2	13.3
Overtaking	4	26.7
Roundabouts	1	6.7

Road

Type of behaviour mentioned	No	%
Road surface conditions	2	13.3
Road positioning	3	20.0

Safety Margin

Type of behaviour mentioned	No	%
Margin of safety	1	6.7
Too close to the vehicle infront	1	6.7
Distance judgement	2	13.3

Pride

Type of behaviour mentioned	No	%
Pride	2	13.3
Don't want to improve	1	6.7
reached pinnacle	1	6.7

Highway Code

Type of behaviour mentioned	No	%
Lane markings	1	6.7
Road sign meaning	1	6.7

DISCUSSION

It can be seen from the data that the most commonly mentioned category of behaviour is observation, with basic motor skills, speed, and information processing frequently mentioned, and the remaining categories only mentioned to a minor extent. Each category will now be discussed in more detail, noting whether it is caused primarily by inadequate skills, inappropriate attitudes, a combination of both these factors, or by other factors previously considered not to be important.

Observation

It is felt that the comments made with regard to observation point to inadequate observation skills, rather than inappropriate attitudes towards observation. This is because the standard Department of Transport driving test pays little attention to observation skills and their assessment. Thus, most of the trainees have never been taught the observation skills necessary for safe driving.

Basic motor skills

Whilst it is surprising to find that many trainees lacked basic motor skills as these are taught on the standard Department of Transport driving test, it must be noted that some of these skills were related to observation; for example, braking techniques, late braking, and mirror use, and could thus be related to inadequate observation skills. It is felt that the problems with the clutch, gears, and coordination of motor actions is due to trainees being nervous at the beginning of the course, hence affecting their driving. Poor steering and use of lights/indicators may however be due to inappropriate attitudes towards undertaking such manoeuvres.

Speed

The comments made generally point to an inappropriate attitude with regards to safe speeds to travel at, leading people to ignore speed restriction signs. In addition, there seems to be another group of drivers who believe that they have to travel at whatever speed the speed restriction sign displays, irrespective of the road circumstances at any particular time. This also demonstrates an inappropriate attitude towards safe travelling speeds.

Information Processing

This indicates a lack of skill in processing information, as such skills are not taught in the standard Department of Transport driving test.

Specific Manoeuvres

These manoeuvres relate largely to advanced driving techniques and are therefore skill based behaviours.

Road

These manoeuvres relate largely to advanced driving techniques and are therefore skill based behaviours.

Safety margins

This problem is partly due to attitudes towards speed and inappropriate information processing techniques caused by an inadequate level of skill.

Pride

This is related to drivers attitudes, with drivers not aware that their driving was unsafe, and hence did not want to learn new techniques.

Highway Code

This was only mentioned by two respondents and is probably due to changes in the contents of the highway code since the trainees passed their driving test. Alternatively, it might be caused by forgetting the signs due to infrequent sighting of such signs, or possibly due to poor observation skills.

SUMMARY

These findings suggest that accidents could be caused by inadequate skills, whereby people may have a positive attitude towards safety, but their beliefs held about what is safe are incorrect due to an inadequate level of skill. In addition, accidents could also be caused by inappropriate attitudes towards several driving behaviours.

If driver training is to be effective, it will have to be capable of improving skills and attitudes. For this to occur, people will have to have a positive attitude towards what is being taught, as otherwise there will be a reluctance to change behaviour. It is therefore envisaged that an analysis of attitudes towards what is currently being taught on such training courses be undertaken at the beginning and end of the course to discover whether this is possible.

Appendix 3

Questionnaire Used for the Direct and Semi-Direct Measurement of Driver Trainees' Attitudes at the Beginning of Training

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Cranfield

Driver Training Questionnaire (Standard)

SECTION 1

Name: _____

What is your age?: _____ years

Are you? Male ____ Female ____

How long have you held a full driving licence? ____ years

How many miles do you drive each year? _____ miles

What were the major reasons why you joined the police force?

Fax (0234) 750875

SECTION 2

Please indicate how important the following reasons were for joining the police force: *(Please circle)*

A) To provide aid and assistance in the event of an emergency

Very Important 1 2 3 4 5 6 7 *Unimportant*

B) The catching of traffic offenders to benefit society

Very Important 1 2 3 4 5 6 7 *Unimportant*

C) High speed driving/thrill of driving fast

Very Important 1 2 3 4 5 6 7 *Unimportant*

D) To be able to skilfully control a vehicle

Very Important 1 2 3 4 5 6 7 *Unimportant*

E) To be thought of by people important to me to be a skilful driver, undertaking an important role in society

Very Important 1 2 3 4 5 6 7 *Unimportant*

SECTION 3

Please indicate your agreement or disagreement with the following statements: *(Please circle)*

A) Catching traffic offenders will benefit society

Strongly Agree 1 2 3 4 5 6 7 *Strongly Disagree*

B) Standard police driver training will enable me to skilfully control a vehicle

Strongly Agree 1 2 3 4 5 6 7 *Strongly Disagree*

C) Driving with flashing blue lights will be exciting

Strongly Agree 1 2 3 4 5 6 7 *Strongly Disagree*

D) High speed driving is thrilling

Strongly Agree 1 2 3 4 5 6 7 *Strongly Disagree*

E) To be thought of as a high speed skilful driver is important to me

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

F) The safety margins and techniques portrayed in "Roadcraft" should be complied to at all times

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

G) Driving in an emergency will be exciting compared to normal police driving

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

SECTION 4

A) Do you want to be a member of the traffic division?
(Please tick)

Yes _____ (Go to question B)

No _____ (Go to section 5)

B) Why do you want to be a member of the traffic division?

SECTION 5

A) Do you aspire to behave while driving in a manner similar to your instructors? (Please tick)

Yes ____ (Go to question B)

No ____ (Go to question C)

B) Please state why you aspire to behave while driving in a manner similar to your instructors?

C) Please state why you do not aspire to behave while driving in a manner similar to your instructors?

THANKYOU FOR YOUR ASSISTANCE

Appendix 4

Questionnaire Used for the Direct and Semi-Direct Measurement of Driver Trainees' Attitudes after the Four Week Standard Phase of Training

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Cranfield

Driver Training Questionnaire (Standard)

SECTION 1

Name: _____

SECTION 2

Please indicate how important the following reasons were for joining the police force: *(Please Circle)*

A) To provide aid and assistance in the event of an emergency

Very Important 1 2 3 4 5 6 7 *Unimportant*

B) The catching of traffic offenders to benefit society

Very Important 1 2 3 4 5 6 7 *Unimportant*

C) High speed driving/thrill of driving fast

Very Important 1 2 3 4 5 6 7 *Unimportant*

D) To be able to skilfully control a vehicle

Very Important 1 2 3 4 5 6 7 *Unimportant*

E) To be thought of by people important to me to be a skilful driver, undertaking an important role in society

Very Important 1 2 3 4 5 6 7 *Unimportant*

Fax (0234) 750875

SECTION 3

Please indicate your agreement or disagreement with the following statements: *(Please Circle)*

A) Catching traffic offenders will benefit society

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

B) Standard police driver training has enabled me to skilfully control a vehicle

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

C) Driving with flashing blue lights will be exciting

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

D) High speed driving is thrilling

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

E) To be thought of as a high speed skilful driver is important to me

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

F) The safety margins and techniques portrayed in "Roadcraft" should be complied to at all times

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

G) Driving in an emergency will be exciting compared to normal police driving

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

SECTION 4

A) Having undertaken a standard police driver training course, do you now aspire to behave while driving in a manner similar to your instructors? (Please tick)

Yes ____ (Go to question B)

No ____ (Go to question C)

SECTION 5

A) Having undertaken a police standard driver training course, do you now want to be a member of the traffic division if your driving was of the standard required?
(Please tick)

Yes _____ (Go to question B)

No _____ (Go to Section 6)

B) Why do you now want to be a member of the traffic division?

SECTION 6

A) Please rate the driver training course you have just undertaken on the following scale (Please Circle).

Very Good			*Neither Good or Bad*			*Very Bad*
1	2	3	4	5	6	7

B) Please write down what you feel are the good and bad points (if any) of the training programme:

Good Points

PLEASE TURN OVER TO WRITE DOWN ANY BAD POINTS

B) Please state why you aspire to behave while driving in a manner similar to your instructors?

C) Please state why you do not aspire to behave while driving in a manner similar to your instructors?

PLEASE TURN OVER

Bad Points

_____

_____

_____

_____

THANK YOU FOR YOUR ASSISTANCE

Appendix 5

Questionnaire Used for the Direct and Semi-Direct Measurement of Driver Trainees' Attitudes After the Extra Two Week Response Phase of Training

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Cranfield

Driver Training Questionnaire (Standard/Response)

SECTION 1

Name: _____

SECTION 2

Please indicate how important the following reasons were for joining the police force: *(Please Circle)*

A) To provide aid and assistance in the event of an emergency

Very Important 1 2 3 4 5 6 7 *Unimportant*

B) The catching of traffic offenders to benefit society

Very Important 1 2 3 4 5 6 7 *Unimportant*

C) High speed driving/thrill of driving fast

Very Important 1 2 3 4 5 6 7 *Unimportant*

D) To be able to skilfully control a vehicle

Very Important 1 2 3 4 5 6 7 *Unimportant*

E) To be thought of by people important to me to be a skilful driver, undertaking an important role in society

Very Important 1 2 3 4 5 6 7 *Unimportant*

Fax (0234) 750875

SECTION 3

Please indicate your agreement or disagreement with the following statements: *(Please Circle)*

A) Catching traffic offenders will benefit society

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

B) Standard police driver training has enabled me to skilfully control a vehicle

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

C) The off-road training at Boreham has considerably improved my driving ability

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

D) The off-road training given at Boreham is exciting

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

E) To be thought of as a high speed skilful driver is important to me

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

F) Driving with flashing blue lights is exciting

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

G) The safety margins and techniques portrayed in "Roadcraft" should be complied to at all times

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

H) High speed driving is thrilling

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

I) Driving in an emergency will be exciting compared to normal police driving

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

SECTION 4

A) Please rate the driver training course you have just undertaken on the following scale (Please Circle).

Very Good			*Neither Good or Bad*			*Very Bad*
1	2	3	4	5	6	7

B) Please write down what you feel are the good and bad points (if any) of the training programme:

Good Points

_____

_____

_____

_____

Bad Points

_____

_____

_____

_____

THANK YOU FOR YOUR ASSISTANCE

Appendix 6

Questionnaire Used for the Assessment of Trainees Attitudes and Skills by Instructors

INSTRUCTOR ASSESSMENT OF TRAINEES

SECTION 1

Name of Instructor _____

Name of Trainee _____

SECTION 2

A) Please rank the overall driving skill of this trainee on the following scale: (Please circle)

Very Good			*Neither Good or Bad*			*Very Bad*
1	2	3	4	5	6	7

B) What was the overall mark given to this student? _____ %

C) Please rank the overall attitude of this trainee with regards to safe driving on the following scale: (Please circle)

Very Good			*Neither Good or Bad*			*Very Bad*
1	2	3	4	5	6	7

C) Do you believe that this student will have any problems with regards to driving in the future? (Please tick)

Yes ____ (Go to question D)

No ____ (Please end questionnaire)

D) What are the future driving problems you believe this student will have?

_____

_____

_____

_____

_____

_____

_____

THANKYOU FOR YOUR ASSISTANCE

Appendix 7

Driver Video Questionnaire

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DRIVER VIDEO QUESTIONNAIRE

SECTION 1

Name: _____ Video Number: _____

What is your age?: _____ years

Are you? Male _____ Female _____

How long have you held a full driving licence? _____ years

How many miles do you drive each year? _____ miles

SECTION 2

Think about the behaviour shown by the driver in the video. What good and/or bad points (if any) most readily come to mind? (Please Circle)

GOOD POINTS:

A._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

B._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

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DRIVER VIDEO QUESTIONNAIRE

SECTION 1

Name: _____

Video Number: _____

SECTION 2

Think about the behaviour shown by the driver in the video. What good and/or bad points (if any) most readily come to mind? (Please Circle)

GOOD POINTS:

A._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 *Not Very Strongly*

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 *Not Very Strongly*

B._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 *Not Very Strongly*

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 *Not Very Strongly*

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C._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

D._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

E._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

F._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

G._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

H._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

I._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

J._____

How strongly do you believe that this was a good point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with safe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

BAD POINTS:

A._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

B._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

C._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

D._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

E._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

PLEASE TURN OVER

F._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

G._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

H._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

I._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

J._____

How strongly do you believe that this was a bad point

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

How strongly do you believe that this is associated with unsafe driving?

Very Strongly 1 2 3 4 5 6 7 Not Very Strongly

PLEASE TURN OVER AND COMPLETE SECTION 3

SECTION 3

A) General Question

Overall what do you think of the driving shown in the video? (Please Circle)

Very Good			*Neither Good or Bad*			*Very Bad*
1	2	3	4	5	6	7

B) Which of the good and bad points that you feel are shown in the video represents the way you would drive in a similar situation?:

Good points	(Please list letters from Section 2)	Bad points
eg, A, B, C.		eg, C, D, E.
_____		_____
_____		_____
_____		_____

THANK YOU FOR YOUR ASSISTANCE

Appendix 8

Questionnaire Used to Measure the Stability and Longevity of Attitudes

Driver Training Questionnaire

1) Number of Months since driver training course was undertaken:

1 Month ____

2 Months ____

3 months ____

4 Months ____

5 Months ____

6 Months ____

7 Months ____

8 Months ____

9 Months ____

Other (Please State) _____

2) Please state which elements of the training you do or do not apply when driving on police duty and during your leisure time by ticking the appropriate box:

ELEMENTS OF TRAINING	POLICE DUTY		LEISURE TIME	
	I Do Apply	I Don't Apply	I Do Apply	I Don't Apply
6 Feature System				
Steering Technique				
Forward Planning/ Observation Technique				
Cornering Techniques				
Gear Technique				
Safety Margins				
Use of Speed				

3) Did you undertake the extra two week response course?
(Please Tick)

Yes ____

No ____

4) What aspects of the training did you enjoy most?

5) What aspects of the training did you dislike most?

6) Please indicate your agreement or disagreement with the following statements: *(Please circle)*

A) Catching traffic offenders will benefit society

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

B) Standard police driver training has enable me to skilfully control a vehicle

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

C) I enjoy driving at high speeds

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

D) The driver training I have undertaken has improved my overall driving ability

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

E) I experience a thrill from taking risks when driving

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

F) To be thought of as a high speed skilful driver is important to me

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

G) The safety margins and techniques portrayed in "Roadcraft" should be complied to at all times

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

H) Police driver training has increased my ability to experience thrill and excitement

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

I) Police driver training courses will improve road safety if undertaken by all drivers

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

THANK YOU FOR YOUR ASSISTANCE

Appendix 9

Questionnaire Used to Measure

Driving Instructor's Attitudes

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Police Driver Instructor Questionnaire.

SECTION 1

Questionnaire Number: _____

What is your age? _____ years

Are you? Male ____ Female ____

How long have you held a full driving licence? ____ years

How many miles do you drive each year? _____ miles

SECTION 2

What do you feel are the major things the standard response driver training programme is trying to achieve?

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SECTION 3

Please indicate how important the following things are for the standard response driver training programme:

A) High speed driving

Very Important *1* *2* *3* *4* *5* *6* *7* *Unimportant*

B) Rapid safe assistance in the event of an emergency

Very Important *1* *2* *3* *4* *5* *6* *7* *Unimportant*

C) High skill car control

Very Important *1* *2* *3* *4* *5* *6* *7* *Unimportant*

D) Appropriate attitude development

Very Important *1* *2* *3* *4* *5* *6* *7* *Unimportant*

E) Roadcraft 6 feature system of car control

Very Important *1* *2* *3* *4* *5* *6* *7* *Unimportant*

SECTION 4

Please indicate your agreement or disagreement with the following statements:

A) Driving instructors should set an example to their students in the manner in which they drive

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

B) Catching traffic offenders will benefit society

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

C) Advanced and instructor level training has enabled me to skilfully control a vehicle

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

D) Driving with flashing blue lights is exciting

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

E) High speed driving is thrilling

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

F) To be thought of as a high speed skilful driver is important to me

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

G) The techniques portrayed in "Roadcraft" should be complied to at all times

Strongly Agree *1* *2* *3* *4* *5* *6* *7* *Strongly Disagree*

SECTION 5

A) Do you believe most students aspire to behave while driving in a manner similar to yourself?

Yes___(Go to question B)
No____(Go to question C)

B) Please state why most students aspire to behave while driving in a manner similar to yourself?

C) Please state why most students do not aspire to behave while driving in a manner similar to yourself?

THANKYOU FOR YOUR ASSISTANCE

Appendix 10

Questionnaire Used to Undertake the Recruitment Policy Research

Police Recruitment Questionnaire

A) What is the ideal type of person the police force is trying to recruit?

B) In general, does the recruitment literature currently available to potential candidates attract the ideal type of person to the police force?

Yes____(Go to question C)

No____(Please state why not below)

C) What is the ideal type of person the traffic division is looking for in people who have undertaken initial training?

E) Is the enjoyment of exciting situations something that will enhance recruitment into the police force?

Yes____(Go to question F)

No____(Go to question G on the next page)

F) Why is the enjoyment of exciting situations something that will enhance recruitment into the police force?

(If you have answered question F, do not answer question G)

G) Why is'nt the enjoyment of exciting situations something that will enhance recruitment into the police force?

THANK YOU FOR YOUR ASSISTANCE